

Breakfast – EU Space Act: the foreseen role of standardization

Welcome Words

19 March 2026

Mr. Nicolas DOMENJOURD – Responsable ICT & Technical Standardization, ILNAS/OLN



I - INTRODUCTION OF ILNAS AND ANEC EIG



ILNAS

Public administration under the authority of the Minister of the Economy, SME, Energy and Tourism

Creation: Law of May 20, 2008

Legislation in force: amended Law of July 4, 2014 reorganizing ILNAS

Total staff: 64 (March 2026)

NATIONAL STANDARDS BODY (OLN)

- Total staff: 7
- Close collaboration with the E.I.G. ANEC-N





Economic Interest Group

Object: Promotion, awareness raising and training, applied research in the field of standardization and metrology in order to support companies' competitiveness in Luxembourg

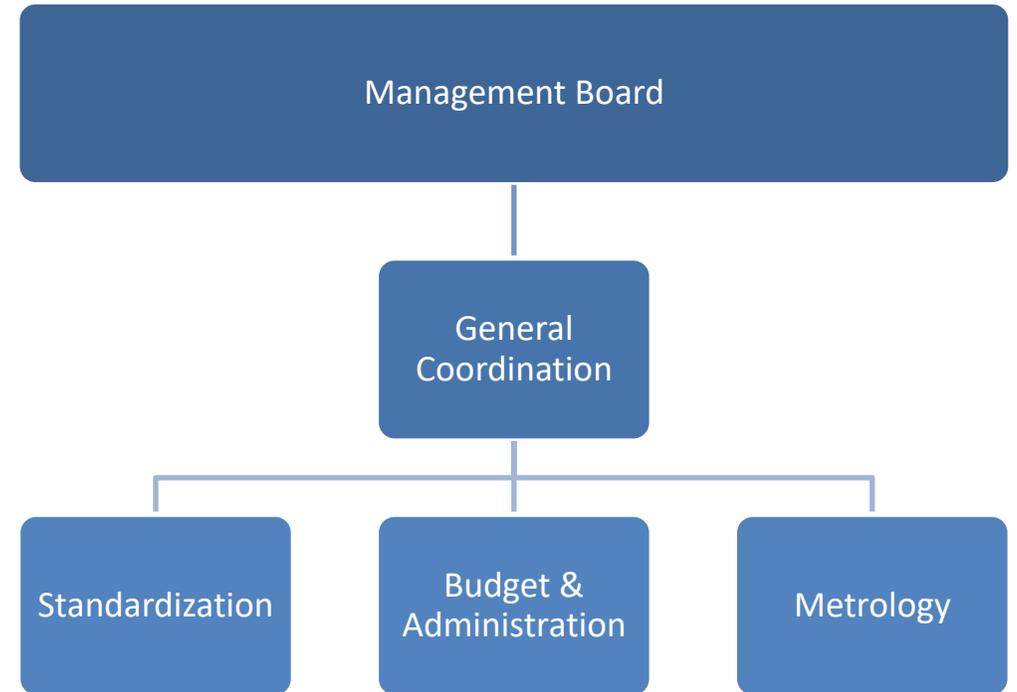
Creation: October 4, 2010

Total staff: 10 (March 2026)

Standardization department

- Total staff: 5

Partners:

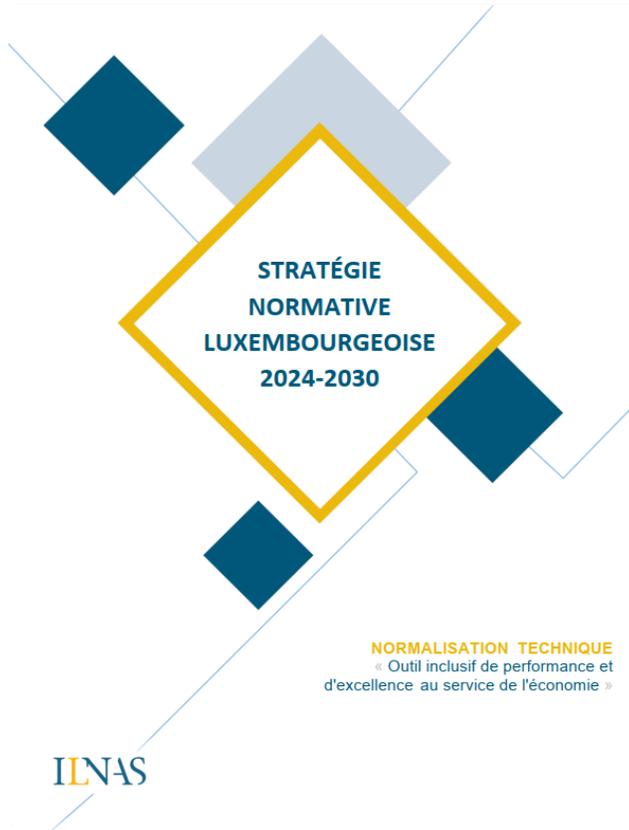


➔ Support for the implementation of the Luxembourg standardization and metrology strategies



II - NATIONAL STANDARDIZATION STRATEGY 2024-2030





TECHNICAL STANDARDIZATION

"INCLUSIVE TOOL FOR PERFORMANCE AND EXCELLENCE TO SERVE THE ECONOMY"

PERFORMANCE

Pillar 1 – Use of relevant technical standards

Pillar 2 – Involvement in the standardization process

EXCELLENCE

Pillar 3 – Active participation of the NSB in the European and international standardization organizations

Pillar 4 – Development of research and education about standardization

3 GROWTH SECTORS IDENTIFIED

2 RELEVANT DOMAINS



“Foster and strengthen the national economic sectors involvement in standardization work”

1

Identifying and following technical standardization activities

- Drawing up a yearly national standards analysis
- Following relevant technical committees
- Following the standardization developments related to European policies and strategies

2

Promoting technical standardization and strengthening national market involvement

- Promoting the use of standards and the participation of the national market in technical standardization activities
- Supporting the national participation to standardization activities
- Create transversal links with other sectors and domains identified by the national standardization strategy

3

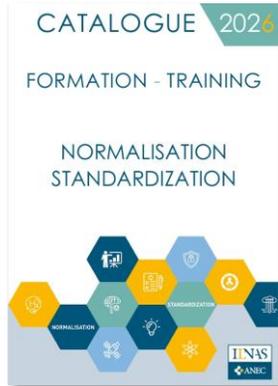
Supporting and strengthening the education about standardization and the related research activities



III - OVERVIEW OF ACTIVITIES



Promoting technical standardization to the market



TRAINING CATALOGUE

9 trainings/awareness sessions notably covering the growth sectors



TECHNICAL STANDARDIZATION DATA SHEETS

- 11 for the [ICT sector](#)
- 7 for the [construction sector](#)
- 10 for the [sustainability domain](#)



STANDARDS ANALYSES

- [ICT sector](#) (April 2025)
- [Construction sector](#) (August 2025)
- [Aerospace sector](#) (March 2026)



ILNAS E-SHOP

- Over 200'000 standards available at competitive prices
- Notification system in the ILNAS e-shop to implement your own standards watch

Reading stations to consult standards for free



EXAMPLES OF RECENT NATIONAL COMMITTEES



NATIONAL COMMITTEE ILNAS/TC 108

Telecommunications – Vertical cabling techniques in residential and mixed-use buildings



NATIONAL COMMITTEE ILNAS/TC 109

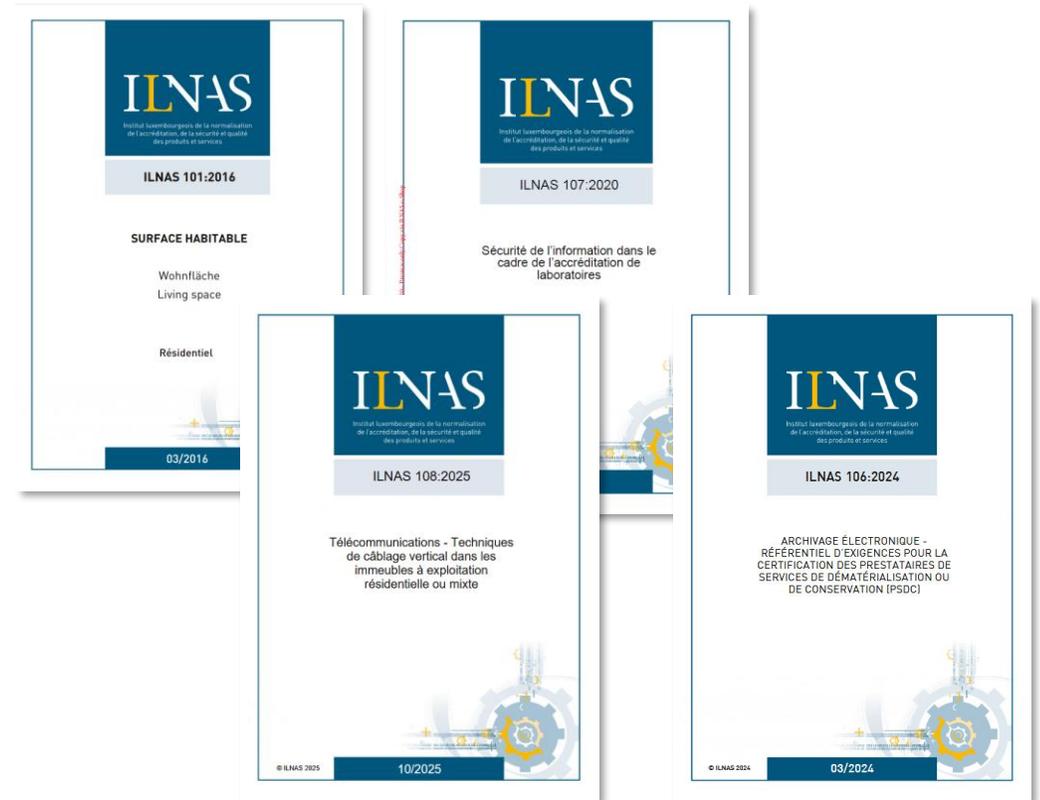
National standard in the field of geotechnics



NATIONAL COMMITTEE ILNAS/TC 110

National Annex to the standard EN 1916 “Concrete pipes and fittings, unreinforced, steel fibre and reinforced”

EXAMPLES OF PUBLISHED NATIONAL STANDARDS



PARTICIPATION IN NATIONAL, EUROPEAN AND INTERNATIONAL STANDARDIZATION PROJECTS



WHO CAN PARTICIPATE?

- Every socio-economic actor in Luxembourg with a certain expertise

WHAT ARE THE COSTS ?

- Participation is free of charge

Registre national des délégués en normalisation - Février 2026

Nombre d'inscriptions aux comités techniques :	
ILNAS/OLN	178
CEN	298
CENELEC	10
CEN/CLC	49
CEN/CLC/ETSI	3
ECISS	0
ISO/IEC	219
ISO	274
IEC	10
Total	1044

Nombre de personnes inscrites : 372

L, av du Swing - L-4367 Belvaux - Tél. : (+352) 24 77 43 40 - Fax : (+352) 24 79 43 40 - Email : normalisation@ilnas.etat.lu - www.portail-qualite.lu

11/02/2026 10:00:00



317 national delegates in standardization
1.071 registrations in technical committees in total

02/2026

Privileged access to draft standards

Opportunity to make comments and votes

Belonging to a network of experts

IV - EDUCATION ABOUT STANDARDIZATION AND RESEARCH ACTIVITIES





The Smart-ICT Team

- Nader Samir** - PHD Candidate
- Since 1.10.2017
- Industrial experience in UAV's
- Saharnaz Dilmaghani**
- PHD Candidate
- Since 01.03.2018
- Standardization experience
- Chao Liu**
- PHD Candidate
- Since 15.10.2017
- Cloud Computing
- Matthias Brust**
- Postdoc
- Project support
- Prof. Pascal Bouvry**
- Principal Investigator
- Project coordination
- PHD supervision



2010



First national standardization strategy (2010-2020)

One pillar dedicated to Education about Standardization
"University training curricula in standardization will be specifically produced, in collaboration with the University of Luxembourg"

2015



University Certificate degree
"Smart ICT for Business Innovation"
 (2015-2019)



2017



First research program *"Technical Standardisation for Trusted Use in the Field of Smart ICT"* (2017-2020)

2021



Second research program *"Technical Standardisation for Trustworthy ICT, Aerospace, and Construction"* (2021-2024)

2021



University Master degree
"Technopreneurship: mastering smart ICT, standardisation and digital trust for enabling next generation of ICT solutions" (2021-...)

PROGRAMME	
STANDARDISATION	ECTS
Smart Secure ICT and Innovation	1
Technical Standardisation	3
TOTAL	4
SMART ICT	ECTS
Smart ICT Technologies I	5
Smart ICT Technologies II	5
TOTAL	10
DIGITAL TRUST FOR SMART ICT	ECTS
Security for Smart ICT I	2
Security for Smart ICT II	3
Trust Architectures for Smart ICT	4
TOTAL	9
TECHNOPRENEURSHIP	ECTS
Management of Business and Technical Innovation	3
Digital Intelligence	2
Legal Aspects	2
TOTAL	7
MASTER THESIS	ECTS
Master Thesis	30
TOTAL	30



2025



Third research program *"Technical Standardisation for Trustworthy and Sustainable ICT, Construction and Aerospace"* (2025-2028)

Swarms of Nano-satellites
Ms. Maria Hartmann

Satellite Images Data Marketplace
Mr. Manuel Combarro Simon

Building Information Modelling (BIM) and its integration with Artificial Intelligence (AI)
Ms. Heidem Houtan

Artificial Intelligence

Quantum Technologies

Aerospace



ILNAS IN COLLABORATION WITH THE UNIVERSITY OF LUXEMBOURG AND THE CHAMBER OF EMPLOYEES

PROGRAMME

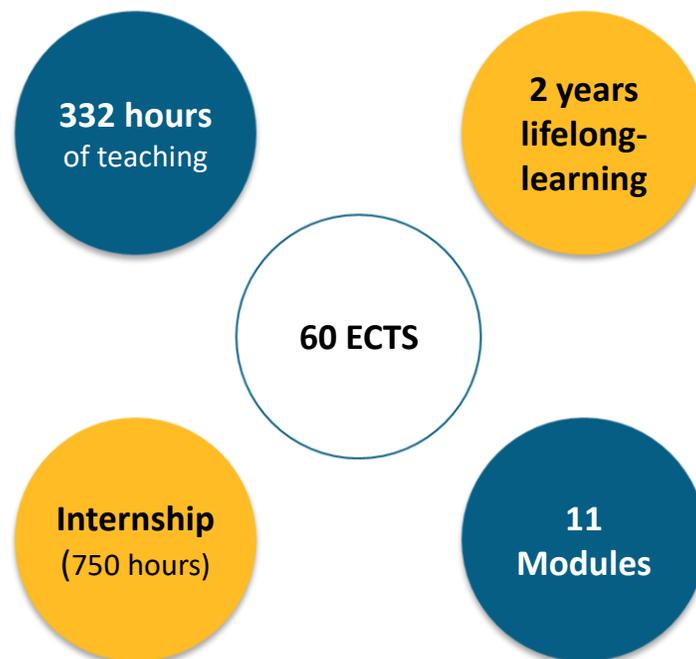
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*** EDITION 1**
2021-2023
 9 STUDENTS
 9 GRADUATED

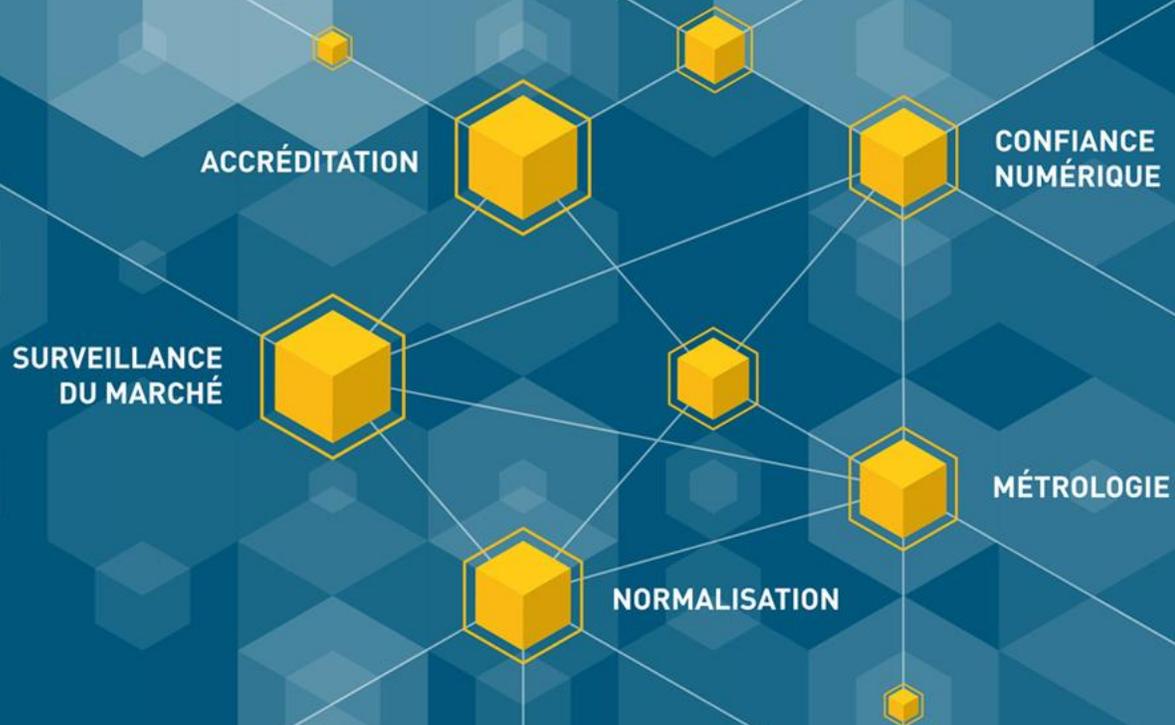
*** EDITION 2**
2023-2025
 10 STUDENTS
 10 GRADUATED

*** EDITION 3**
2024-2026
 7 STUDENTS



With the support of:





ILNAS

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Introduction to the EU Space Act

ILNAS – 19.03.2026

Michèle Bley - Director, space and investment funds
Ministry of Economy



Context

- ✈ Rapid growth and commercialization of space activities – space systems now critical infrastructure for EU economy, security and public services – Increase of commercial space activity, on top of government/civil activity, leading to a proliferation of space debris
 - ➔ realization that exponential growth of space activity (and debris) threatens integrity of EU space activities
- ✈ Regulation of space activities historically remains at national level
 - ✈ More than half of EU Member States have adopted national space legislation, while others rely on general legal frameworks
 - ✈ Member States authorize and supervise operators to manage State responsibility and potential international liability per UN space treaties (Outer Space Treaty 1967; Liability Convention 1972)
 - ➔ Different national authorization systems, requirements and supervisory approaches across the EU
- ✈ European Commission argues this situation creates regulatory fragmentation within the internal market

EU's proposed solution? The draft Regulation on the **safety, resilience** and **sustainability of space activities** in the Union...

...the **EU Space Act**

Act proposal submitted in June 2025 – Danish Presidency compromise text proposal submitted in December 2025 – Council negotiations in progress



Objectives of the EU Space Act

Two-fold:

- Lay down rules for the establishment and functioning of the internal market of space-based data and space services
- Achieve a high common level of **safety, resilience** and **sustainability** of space activities (i.e., technical standards) when providing space services and space-based data in the EU

How?

- ✈ Create a common regulatory framework for authorizations (limited to technical rules on safety, resilience and sustainability)
- ✈ EU rules designed to integrate into (imbricate with) existing national authorization procedures rather than replace national licensing systems
- ✈ National authorities remain responsible for granting authorizations, applying common EU requirements and coordinating at Union level
- ✈ Ensure non-EU operators and non-EU originated space services and data are subjected to the same technical standards



Scope of the EU Space Act

The scope covers:

- ✈ Provision of space-based data within the EU
- ✈ Provision of space-based services within the EU, such as
 - ✈ Launch operations conducted by EU operators or from EU territory
 - ✈ Operation and control of space objects, including satellites and constellations
 - ✈ In-space operations and services (ISOS)

By:

- ✈ EU-based operators
- ✈ Non-EU operators providing services or data within the EU (either via an URSA registration or via bi-lateral agreements)
- ✈ International organizations

The regulation applies across the lifecycle of space activities, including design, launch, operation, in-orbit management, and end-of-life disposal.

Certain exclusions or differentiated regimes may apply to defense or national security activities conducted exclusively under Member State responsibility, small-scale or university activities.



EU Space Act authorization process

The EU Space Act establishes a coordinated authorization system intended to harmonize procedures while preserving Member States' roles as licensing authorities. This process is **limited to the verification of the technical rules** introduced by the EUSA in relation to safety, security and sustainability.

Key steps of the authorization process include:

- ✈ Submission of an application by the operator to the competent national authority, including technical, operational, security, and sustainability documentation
- ✈ Verification of completeness and eligibility of the application
- ✈ Technical and regulatory assessment against EUSA requirements, covering safety, cybersecurity, resilience, debris mitigation, and environmental considerations
- ✈ Decision on authorization
- ✈ Continuous supervision after authorization

An EUSA authorization is valid in all MS. However, operators would still be subject to national authorization processes in relation to items not covered by the EUSA (for e.g., governance, finance...).

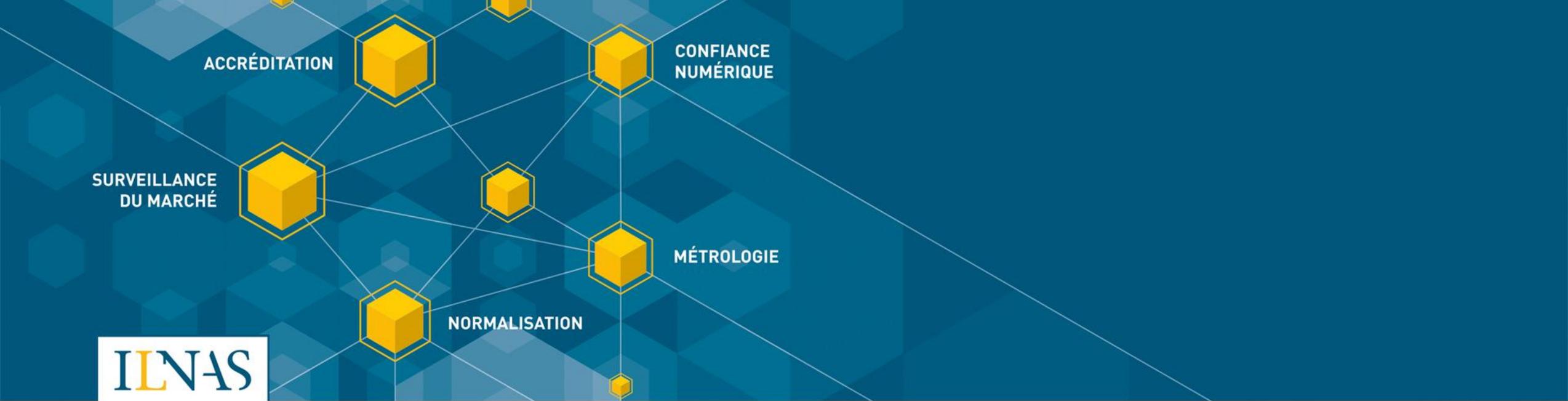


Technical rules : safety, resilience and sustainability

Objective : ensuring safer orbits, safeguarding space systems from cyberattacks, building a greener space economy

- ✈ **Safety** requirements aim to protect against physical risks resulting from space activities, by imposing on space infrastructure (launch vehicles and spacecraft) and services against technical requirements ranging from space debris mitigations to maneuverability to collision avoidance.
- ✈ **Resilience** requirement focus on cybersecurity risk management measures. The EUSA indicates that “cybersecurity requirements under NIS2 and [the EUSA] should be synchronized and coordinated, to ensure the requirements are identical for all types of entities” – unclear articulation with NIS2.
- ✈ **Sustainability** obligations address the long-term preservation of the orbital environment via the determination, verification and transmission of space operator’s environmental footprint for their space activities.

The EU Commission is empowered to adopt delegated acts specifying and further detailing such technical rules.



Breakfast – EU Space Act: the foreseen role of standardization

Understand the role of standardization in EU legislation

19 March 2026

Dr. Lucas CICERO – Aerospace and Technical Standardization Project Officer, ILNAS/OLN



- I. Introduction
- II. Standardization generalities
- III. Standardization in EU legislation



- I. Introduction
- II. Standardization generalities
- III. Standardization in EU legislation



GLOBAL OVERVIEW

- First proposition of regulation EU Space Act has been published by European Commission on 25 June 2025, new communication has been published in December 2025.
- The current proposal provides a regulatory framework aiming to strengthening
 - safety
 - resilience
 - sustainability
- Current EU Space Act regulation proposal provide “high-level” requirements (essential requirements)
- EU Space Act first proposition ([COM/2025/335 final](#)) and second one ([10935/25](#)) have a dedicated chapter to standardization.
- The role of standards as foreseen in the EU Space Act would follow general rules of EU

→ Following slides will provide elements to understand how standards support EU regulation from general perspective

- I. Introduction
- II. Standardization generalities**
- III. Standardization in EU legislation



DEFINITION STANDARDIZATION¹

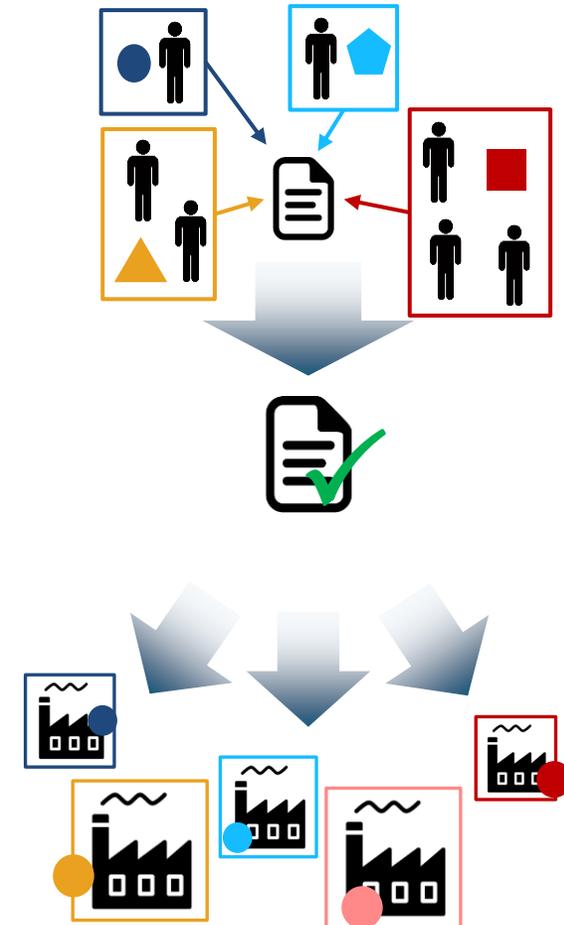
Standardisation is the definition of voluntary technical or quality specifications with which current or future products, production processes or services may comply.

DEFINITION STANDARD¹

A technical specification, adopted by a recognized standardization body, for repeated or continuous application, with which compliance is not compulsory.

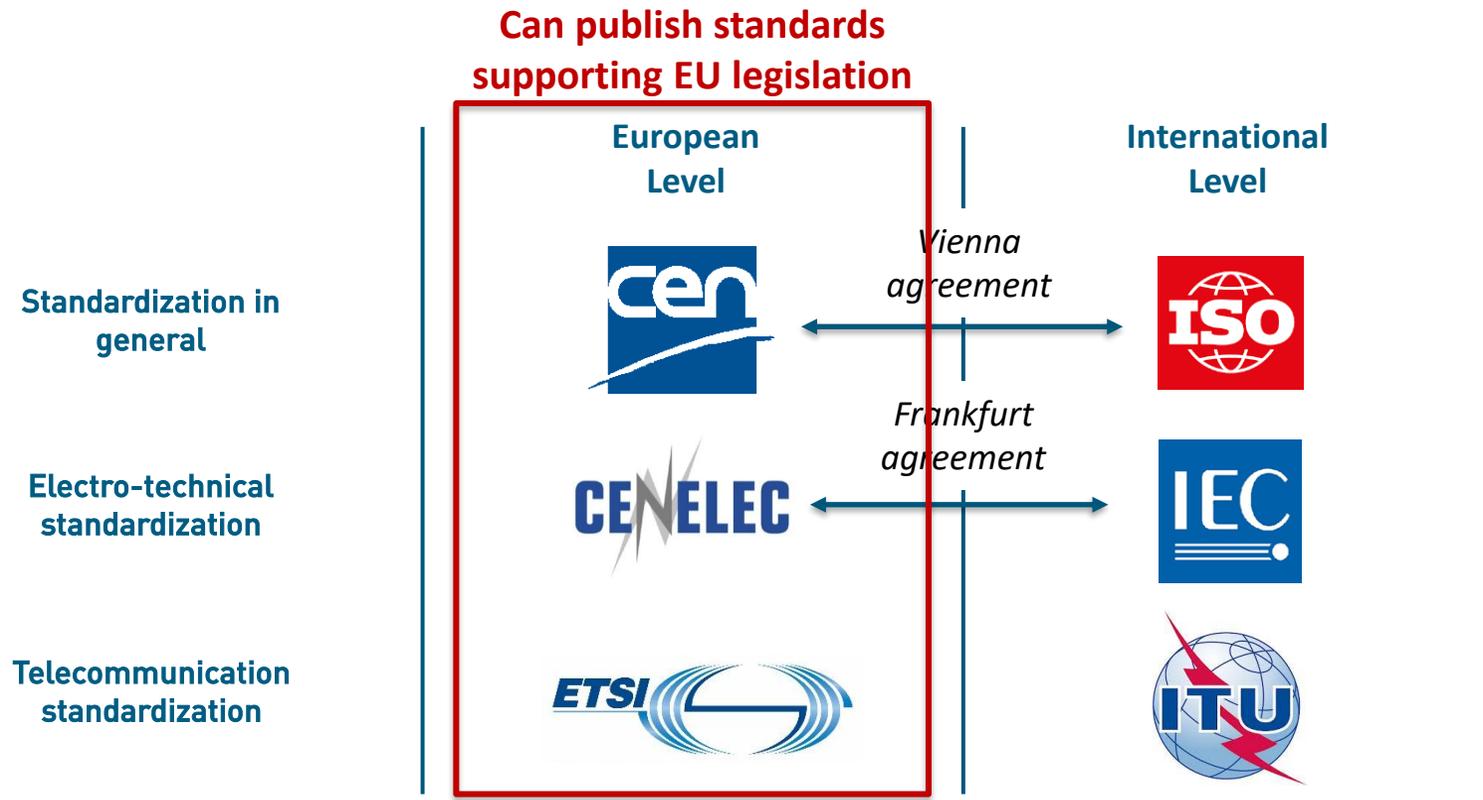
FOUNDING PRINCIPLES¹

Coherence – Transparency – Openness – Consensus – Voluntary application –
Independence from special Interests – Efficiency



³ [REGULATION \(EU\) No 1025/2012 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 25 October 2012 on European standardization](#)

RECOGNIZED STANDARDIZATION ORGANIZATIONS¹

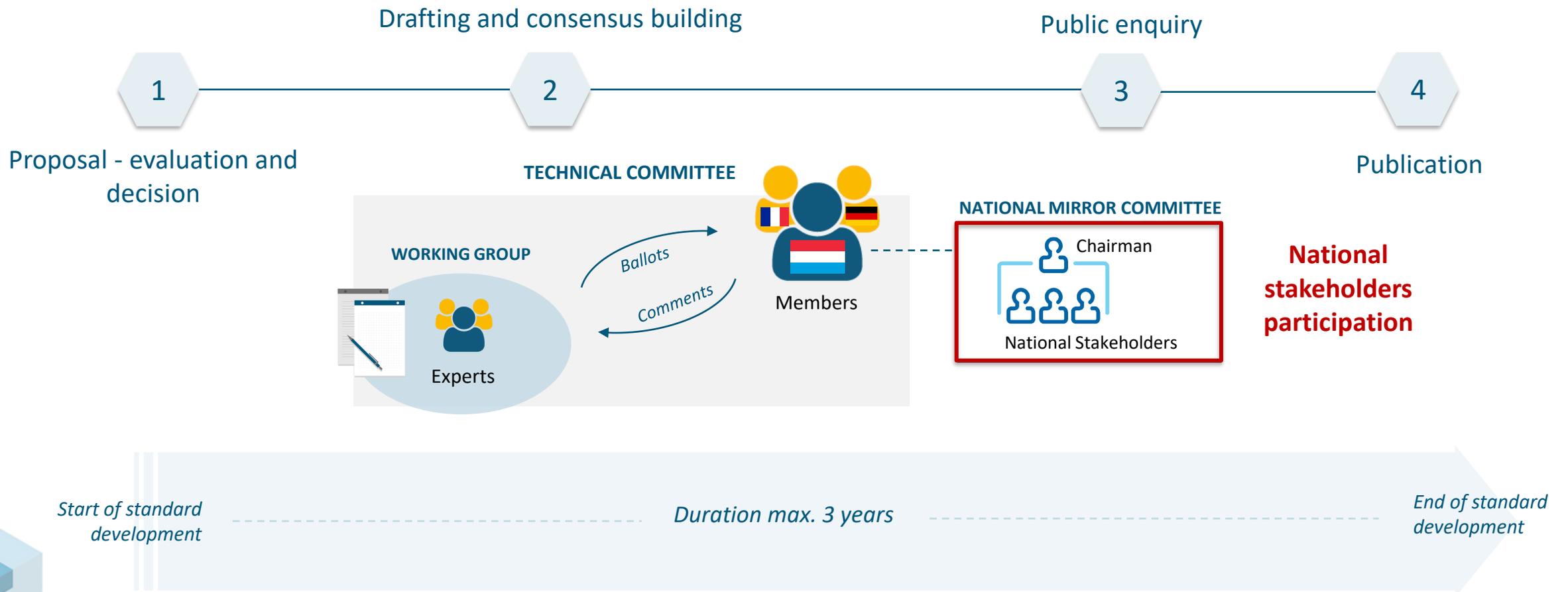


+ all National Standardization Bodies of EU Member States

e.g. for Luxembourg : **ILNAS**

¹ [REGULATION \(EU\) No 1025/2012 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 25 October 2012 on European standardization](#)

EUROPEAN STANDARDS DEVELOPMENT PROCESS



- I. Introduction
- II. Standardization generalities
- III. Standardization in EU legislation**



CONTEXT

- Nowadays, each product placed or service used on EU Single Market has to comply to EU regulation.
- Until now, space products, especially in orbit equipment, didn't have dedicated EU legal framework.
- With EU Space Act, in-space equipment will have to comply with legal requirements related to safety, resilience and sustainability
- **Standards will play a specific role to be compliant with legislation**

HISTORY BACKGROUND

- Before 1985, products/services placed or used on EU market/territory were submitted to several source of requirements:
 - National laws (which could contain technical requirements)
 - National technical specifications
 - National standards
 - European laws (which could also contain technical requirements)
 - European standards

RISKS FACED

diverging rules - wrong role of legislator (definition of technical requirements) – no harmonization between EU Member States



Barrier to trade within EU Single Market
Lack of competitiveness
Obstacle to innovation

IN 1985

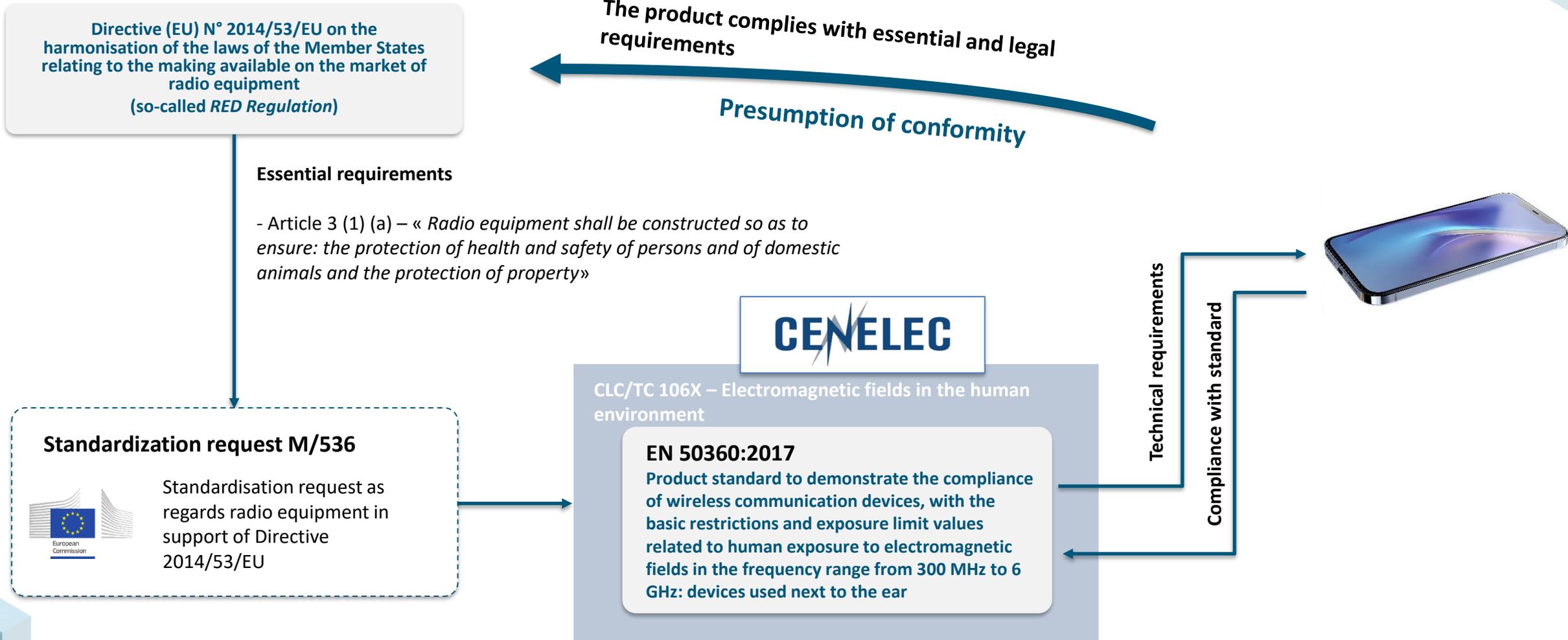
« Council Resolution of 7 May 1985 on a new approach to technical harmonisation and standards » 85/C 136/01

Consequences : change of approach and clarification of the process

- First time in EU legislation that **the role of standards** has been clearly defined : **they define technical requirements**
- **Essential requirements** are defined in specific **regulations** (safety, environment, quality, etc.)
- Indirect link between regulation and standards via a **specific legislative framework**
- Principle of « **presumption of conformity** »
- Certificate of conformity delivered by third-party

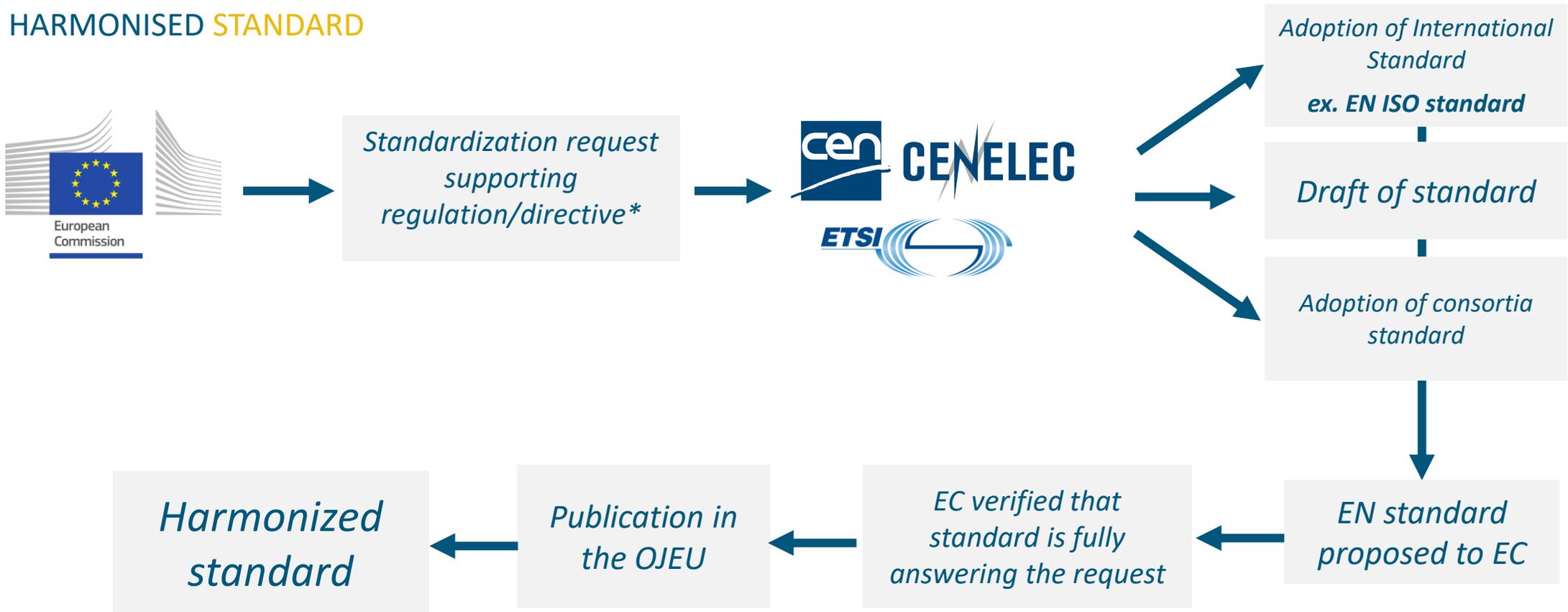
First definition of « harmonised » standard in the European legislation

Presumption of conformity



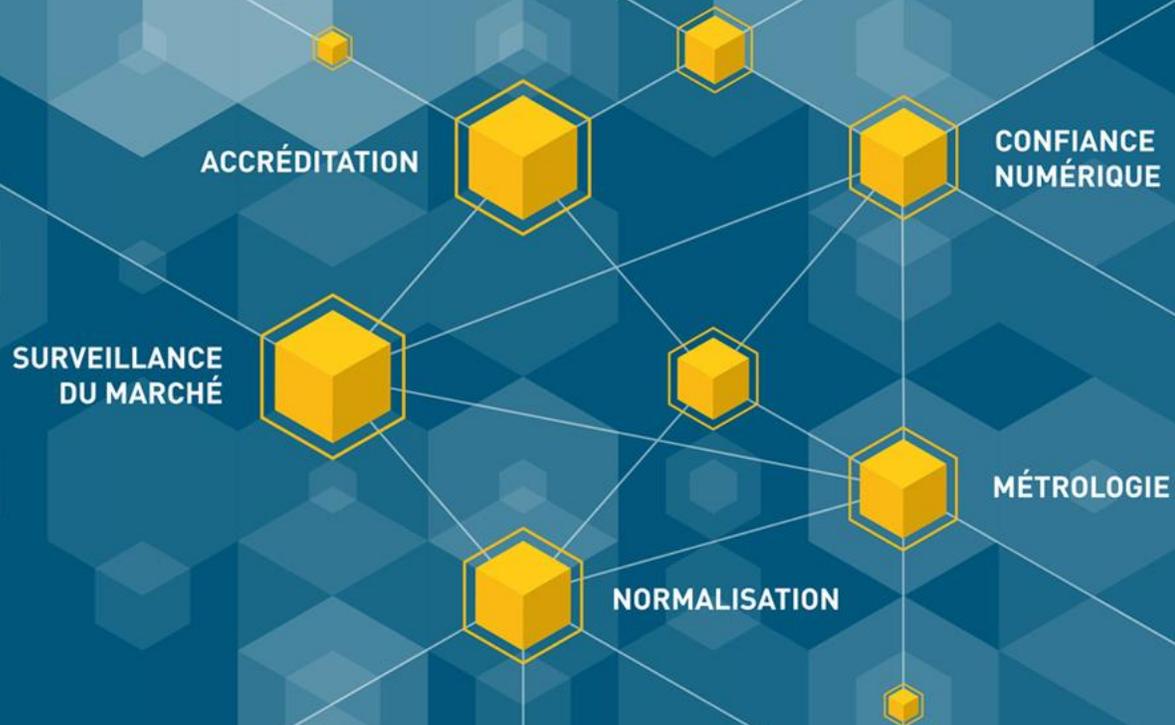
Presumption of conformity

HARMONISED STANDARD



Harmonised standards are **not mandatory**; it is the simplest and fastest solution to comply with EU legislation

The implementation of harmonized doesn't exempt to assess conformity



Thank you for your attention!

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1 → ESA's role in Space Standardisation Activities



ESA's role in Space Standardisation activities



ESA-only Standards and Handbooks



European Cooperation for Space Standardization



European Space Components Coordination



Consultative Committee for Space Data Systems



European Committee for Standardization



Other Standardisation bodies: US MIL, ISO, etc.

Standards Development

- ESA **contributes** to the development of standardisation documents:
 - as “ESA-only” document
 - as part of standardisation bodies where ESA is member or contributor (ECSS, CCSDS, ESCC, CEN, ISO)

LEAS for ESA projects

- **LEAS (*List of ESA Applicable Standards*)** contains all standards to be used by ESA projects

European Cooperation for Space Standardisation













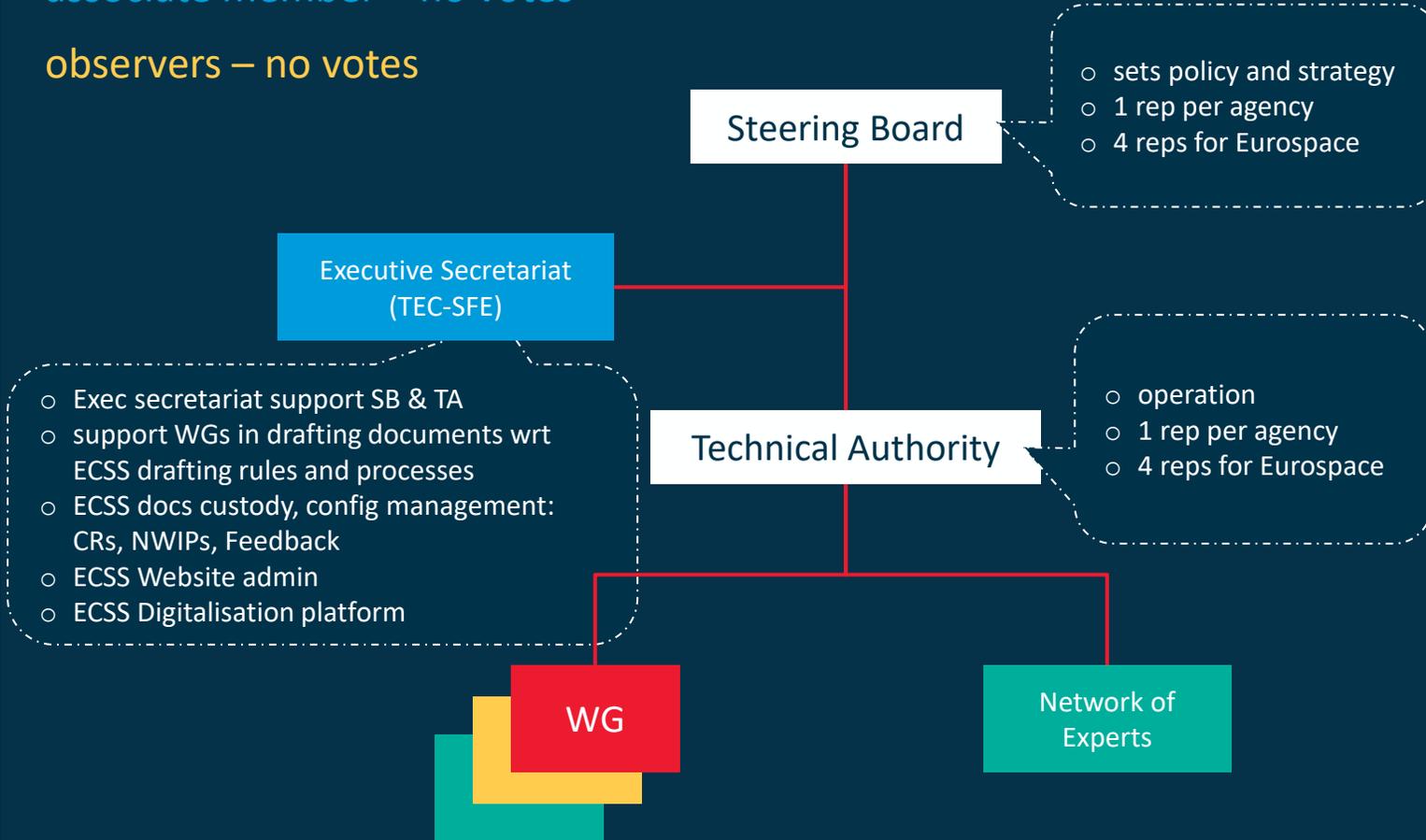








- voting members – 1 vote each
- voting members – 4 total votes
- associate member – no votes
- observers – no votes

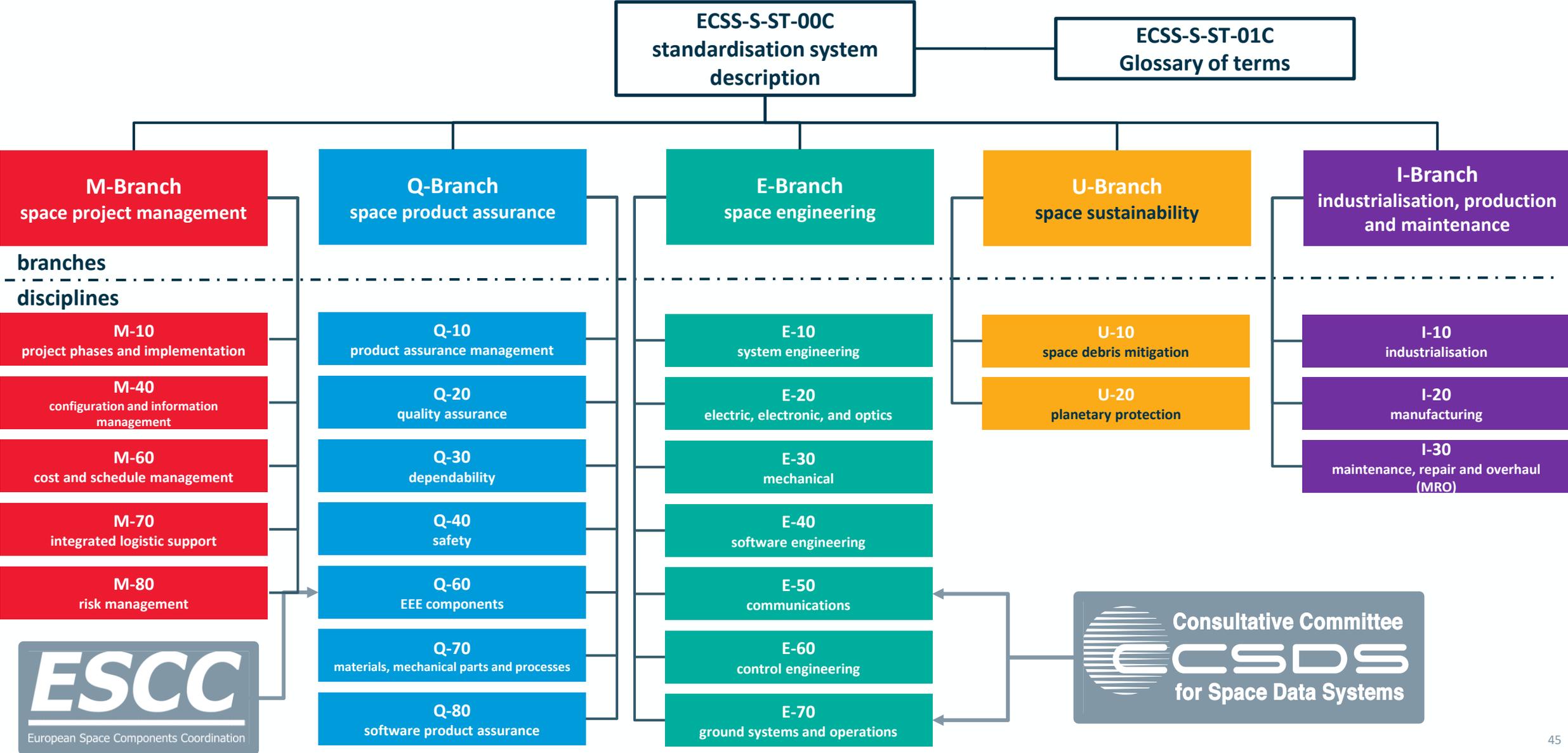


ECSS – Cornerstone for Space Programme & Procurement



→ ECSS is present at every interface and stage of the European space supply chain

ESA/ECSS Standardisation Documentation Structure



ECSS in Numbers



>30000 ECSS requirements

- >18000 engineering requirements
- >500 project management requirements
- >11000 product assurance requirements
- 80 sustainability requirements

>11

active WG for new ST/HB, including:

- ML qualification for space projects
- Space Segment Operability
- Magnetic cleanliness
- Security in space systems lifecycles
- Structural design and verification of pressurised hardware
- CANbus Extension Protocol
- COTS

ESA UNCLASSIFIED – For ESA Official Use Only

project requirements tailoring

>25000 Large mission

<7500 IOD mission (eg PROBA)

(tailored) ECSS requirements

project-specific

141

ECSS standards adopted as European Norms by CEN

59

ECSS handbooks adopted as Technical Reports by CEN

8

Requests to translate ECSS standards:

- Japan
- Belarus
- China
- Ukraine
- Kazakhstan
- South Korea
- Poland
- Russia

>300

Working Groups since 1994

30 years

ECSS started in 1994

29 years since the first ECSS standard was published

141

active standards

59

active handbooks

>1100

training course attendees since 2017

>40%

training course attendees from SMEs

>50

ESA space projects using ECSS standards



2 → ECSS Industrialisation branch development



ECSS-I-ST-00C
8 February 2025

**Industrialisation,
Production and
Maintenance**

General principles

This document is the Draft from the ECSS-I-Branch WG edited for formatting by the ECSS Secretariat. See change log of changes and editing done.
Klaus Ehrlich, 6 February 2025.

DISCLAIMER (for drafts)
This document is an ECSS Draft Standard. It is subject to change without any notice and may not be referred to as an ECSS Standard until published as such.

ECSS Secretariat
ESA-ESTEC
Requirements & Standards Section
Noordwijk, The Netherlands

ECSS-I-ST-00-10C
8 February 2025

**Industrialisation,
Production and
Maintenance**

Requirements

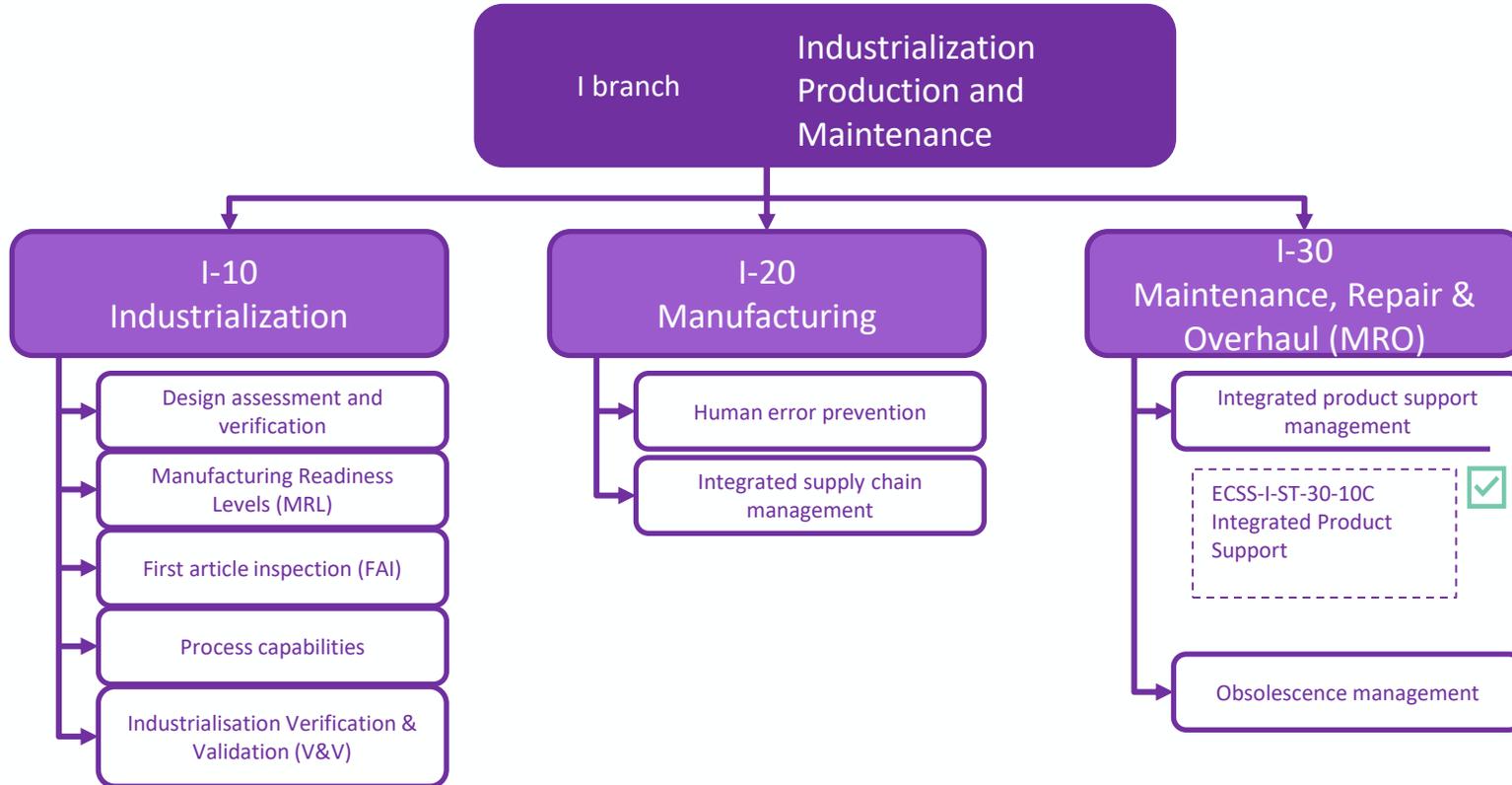
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ECSS Secretariat
ESA-ESTEC
Requirements & Standards Section
Noordwijk, The Netherlands



Goal: enable industrialisation, commercialisation, and serial production of space products



Development plan



1. Eurospace: « ...*real motivation to proceed* »
2. ECSS WG working on:
 - I-branch General Principles ECSS-I-00
 - I-branch Requirements doc
 - Road map for full implementation
 - Perform gap analysis in relevant ECSS disciplines
3. ECSS WGs to implement the 3 disciplines
4. CRs to ECSS, Draft missing/New Standards

ON-GOING

Future steps ?

- Synergies ESA/ECSS/Eurospace
- First Documents within 6 months
- Full Roadmap over 2 years

SCOPE and OBJECTIVES



Prototype to Product

From development to creating the First Article to scalable production



Resilient Supply Chains

Reduce dependency on traditional suppliers, integrate new industry players



From Product to Serial Production

End-to-end capability for large-scale satellite production to meet ESA and EU demands

MEANS and Methods

Automation

Scaling-up production
end-to-end
Digitalisation
AI, Digital Twins,
Robotics

Modularity / Scalability Interoperability

“plug & play”
standardised
sub-systems

Resilient supply chain

Building up
industrial
capabilities

Product & Process Streamlined Acceptance

& Certification
carried out by ESA

3 → ECSS Next Generation / Issue-D & Digitalisation

Key Objectives

- 1** Reduce cost and threshold for ECSS utilisation while ensuring product quality
- 2** Enable all stakeholders to select and apply the **relevant** ECSS content via simplified normative structure and digital tools

To be achieved by



ECSS Restructuring
"essential requirements"



End-to-End
Digitalisation for
tailored solutions



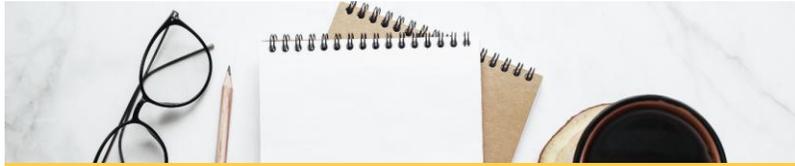
Collaborative project
during 2024/26

what how why



ECSS NextGen Working Group





ECSS Issue D



Digitalisation

→ clear separation of existing ECSS content:

what requirements

how means of compliance

why guidelines/information

→ commitment from ECSS members

→ work performed by the NextGen WG (Space Agencies, Industry, consultants)

Requirement Management Tool & Collaborative Platform

→ switch from document-based approach to a requirements database

→ exchange interfaces with industry

Multidimensional Tailoring

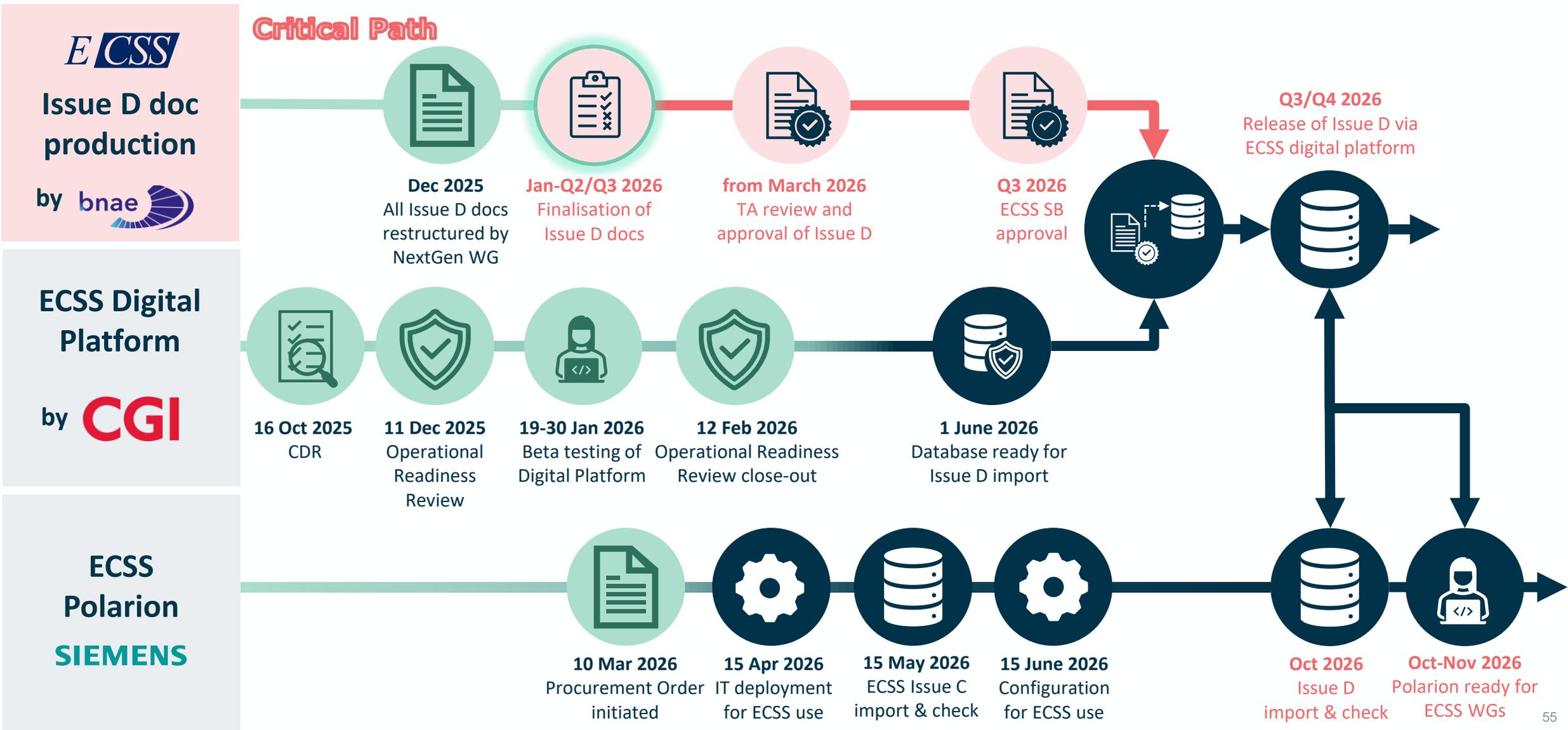
→ easy filtering of requirements for each project:

i.e. I am developing a solar panel for a 2000Wh satellite. What requirements shall apply ?

→ use existing training data to help the application of standards in projects and **flow down of reqs**

→ ECSS issue-D and Digital platform will be released together Q3/2026

ECSS Issue D timeline up to publication



4 → ESA mission classification



OBJECTIVE:

Reduce the project development requirements and oversight while accepting the associated, but controlled, level of risk
 4 mission classes based on criteria as STRATEGY, IMAGE, COST, LIFETIME, COMPLEXITY

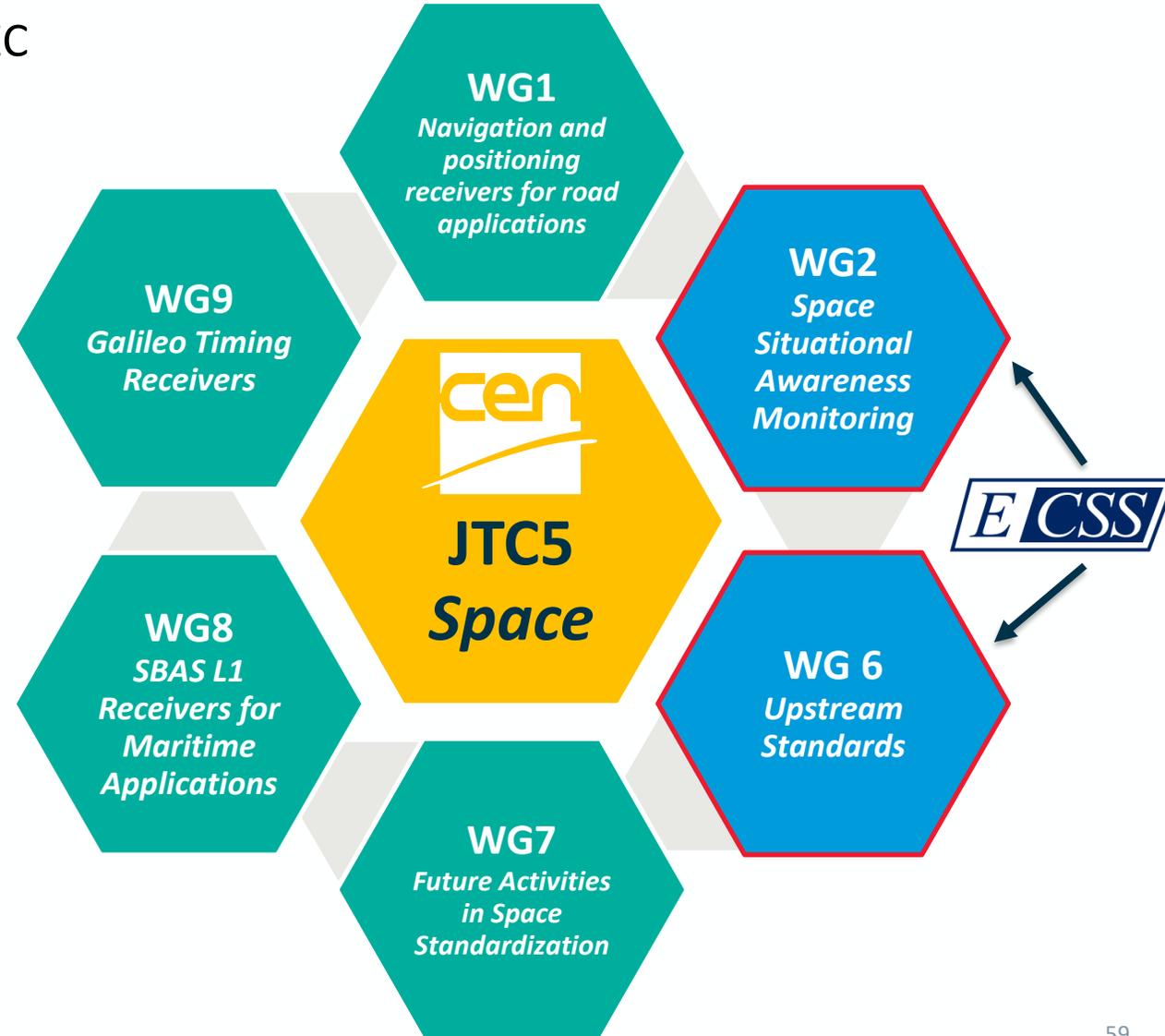
 mission classes	Alpha 	Beta 	Gamma 	Delta 
Criticality to ESA Objectives Flagship mission, International cooperation, Strategy and image	Extremely critical	Highly criticality	Medium criticality	Low criticality
COST At completion incl. phase E1	>400MEur	200-400 Meur	25-200 Meur	<25 MEur
Mission Lifetime Nominal lifetime duration	>7 years	5-7 years	2-5 years	<2 years
Mission Complexity Design Interfaces unique Payloads, New Technologies development	Extremely complex	Highly complex	Medium complexity	Low complexity

5 → ECSS and CEN CENELEC/JTC5 'space'

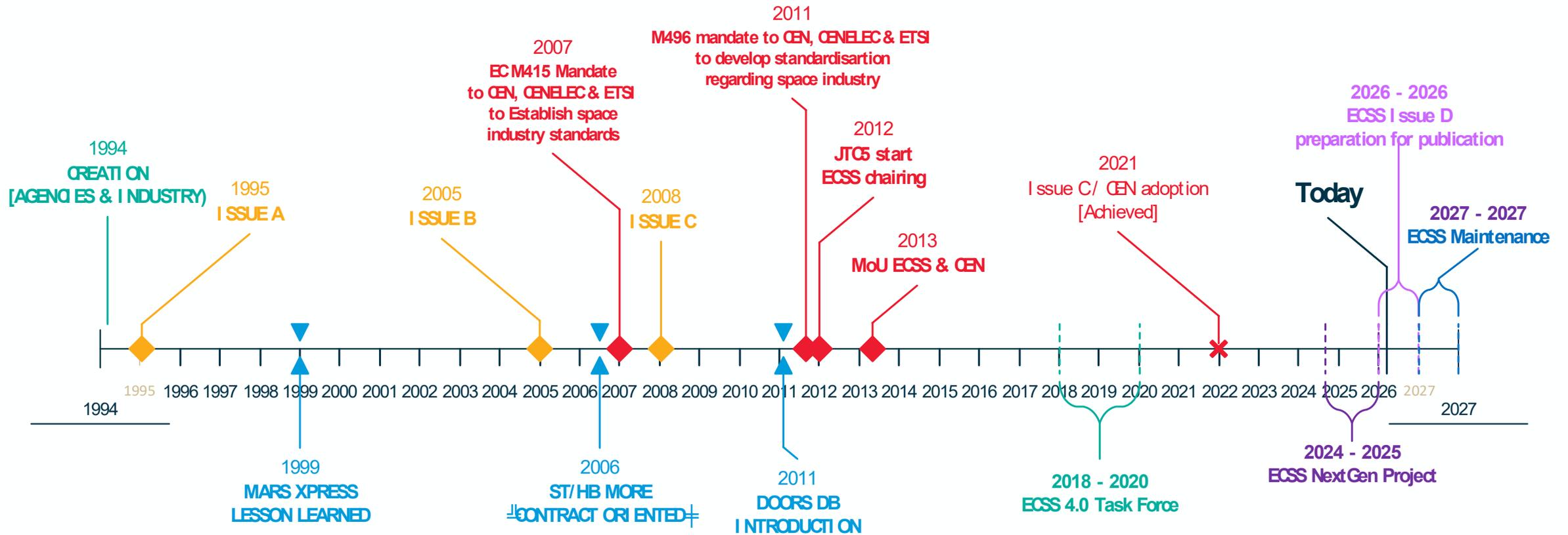
JTC5 covers all standardisation activities in CEN-CENELEC related to SPACE including dual-use aspects, systems of systems, upstream and downstream applications.

TC5 develops European Standards (EN) to support the implementation of EU-level space projects.

JTC5 is supported by 6 WGs for drafting standards



ECSS Timeline, EC Mandates and JTC5 creation



MoU main elements (2013)

Downstream Standards

relating to exchange, processing and utilization of space mission data in support of end user applications

Upstream Standards

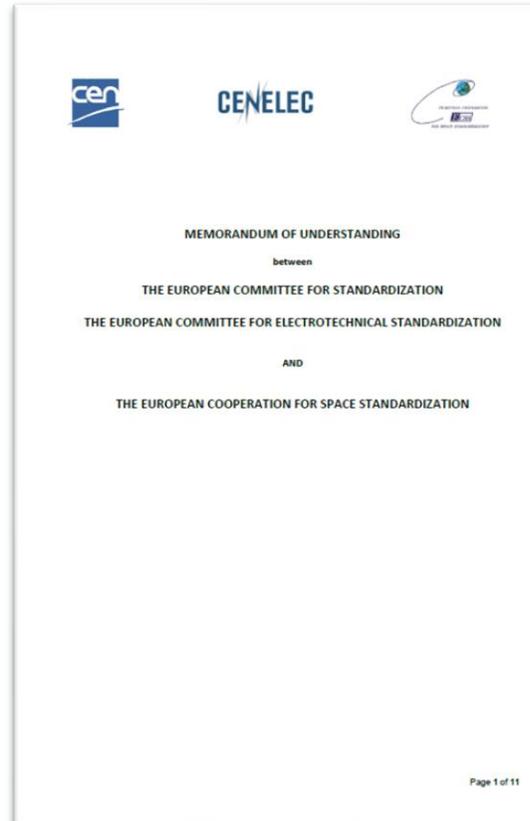
relating to the design, development, testing, launching and operation of space and on-ground associated systems and products

Scope of the MoU

- **Upstream Standards: led by ECSS**, joint development, parallel review, published by both)
 - granting ECSS standards EN status
- **Downstream Standard: led by CEN-CENELEC** unless otherwise agreed
- Avoid discrepancies, **5 years periodic review**

Copyright and distribution

- copyright of EN belongs to CEN, of ECSS to ECSS
- EN distributed per CEN rules, ECSS per ECSS rules



Duration

- ECSS is chairing JTC5,
- coordination with CEN-CENELEC (CCMC)
- joint steering committee and an annual meeting to follow-up the MoU implementation
- original period of **4 years** (2013-2017)
- **automatically extended for 4-year periods**
- 6 months notice for withdrawal

**CEN/JTC5 chaired by ECSS:
Federico Chiusano (ESA/ECSS)**

**June 2025 (3 years period).
Last meeting –15th Jan. 2026
Next meeting in October 2026**

JTC5 WGs structure and workplan



WG 1 *Navigation and positioning receivers for road applications*

- Standards to determine the accuracy, continuity, availability, and integrity of GNSS-determined positions, through a record and replay approach of real GNSS signals for laboratory testing
- EN16803 (part 1 to 4) **published** in 2020-24 timeframe.
- GPSTART-3 "Performances of GNSS receivers for autonomous vehicles" – Jan 2024 – Dec 2026

ACTIVE
Initiating 5-years systematic review EN16803



WG 2 *Space Situational Awareness Monitoring*

- stand-by since end 2021 (funding ended)
- 3 active projects on hold (glossary of near-Earth objects and space surveillance & tracking terms, glossary of space weather terms, and FITS keyword requirements)

STAND-BY
since end 2021
(funding ended)



WG 6 *Upstream Standards*

- All ECSS issue-C (+150 ST and 59 HB) were adopted as Ens and TRs (2021)
- To be discussed how to Adopt the NEW ECSS issue-D once published by end 2026.

STAND-BY
(ECSS Issue C to D) ?



WG 7 *Future Activities in Space Standardization*

- EC requested re-activating WG7
- No activities currently

ACTIVE
(but no activities)



WG 8 *SBAS L1 Receivers for Maritime Applications*

- consolidated European input to IEC 61108 series *Maritime navigation and radiocommunication equipment and systems*
- all its projects have been completed

ACTIVE
standby until further notice



WG 9 *Galileo Timing Receivers (started in September 2022)*

- "Galileo Timing Receivers - Functional and Performance Requirements and associated Tests. EN16605:2024 **published**".
- Potential review discussed in Dec 2025, roadmap to elaborate, NWIP to be prepared

ACTIVE
EN16605:2024 published
Review roadmap to elaborate

6 → Perspectives and Conclusions





The EU space act → the “*EU’s ambition for a cleaner, safer and more competitive space sector*”.

Increasing competitiveness

“*progressive global rules and best practices in space to allow for a European impact and a strong position on global space governance matters, including in creating a sustainable space environment*”

“*central role of standards in supporting policy goals with regards to the objectives of sustaining trade, innovation and economic growth*”

Resolution on Strengthening Europe’s Competitiveness through Space, [ESA/C-M/CCCXXV/Res.1\(Final\)](#)

Protecting space assets



- **Safety:** launch and spacecraft safety (collision avoidance)
- **Resilience / security:** security risk assessment
- **Environmental sustainability:** life cycle assessment & eco-design

- The EU Space Act positions the EU to lead in setting global standards for safer, more resilient, and sustainable space activities, relying on the current European standardization framework
- Art.104 empowers the Commission to request EU standardisation bodies to draft standards or adopt implementing acts, considering existing European or international standards
- An EU–ESA agreement will define the conditions for ESA’s support for technical specifications needed for standardisation under Commission supervision
- In line with Art.104, EU standardisation should consider ECSS standards to avoid duplication

ESA RECOMMENDATIONS FOR INCLUSION IN THE SPECIFIC EU-ESA AGREEMENT

1	ESA will actively contribute to the development of new space standards, which should build on existing European and international standards, in particular upstream ECSS standards
2	ESA will continue to evolve European Space Standards, with the ECSS stakeholders, to support the Act's goals through existing or new committees and frameworks

ECSS standards capitalise on +30 years of experience with a large positive impact on the European space sector.
ECSS evolutions (Issue-D, I-Branch) are widely supported by Eurospace and the industrial stakeholders
ECSS provide a single coherent standardisation system developed by European stakeholders

STANDARDS will be required for the EU's Space Act (safety, security, and sustainability).

An agreement to strengthen ESA-EU cooperation must be prepared in parallel with the finalisation of the legislative proposal.

ESA supports Standardisation under the Act and looks forward to collaborating with EC.

ESA will continue to coordinate and develop European Space Standards, with the ECSS members, to support the EU Space Act's goals through existing or new committee and frameworks.

ESA's contribution to the development of new space standards should be built on ECSS

ESA Member States should encourage close ESA–EC collaboration in refining the Act and drafting delegated and implementing acts

Produced by

ESA / ECSS

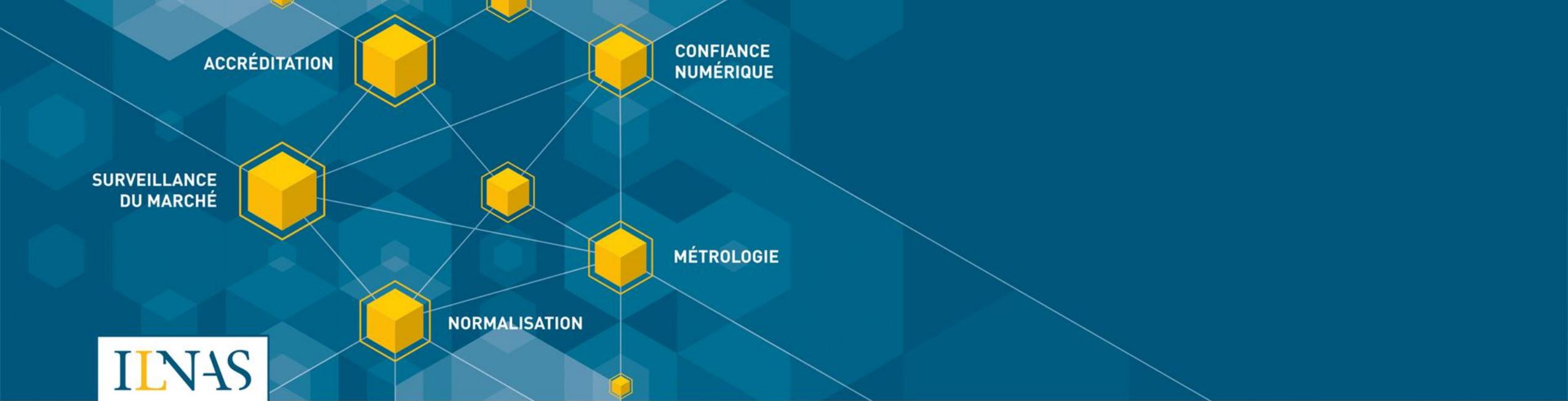
Federico.Chiusano@esa.int

ESA Head of Section for
Space Standardisation

&

CENCENELEC/JTC5 'Space' chair

ECSS secretariat: ecss-secretariat@esa.int

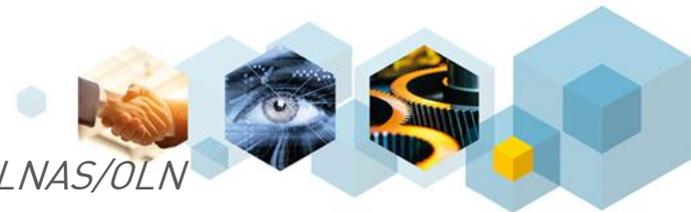


Breakfast – EU Space Act: the foreseen role of standardization

EU Space Act from standardization perspective

19 March 2026

Dr. Lucas CICERO – Aerospace and Technical Standardization Project Officer, ILNAS/OLN



- I. Introduction
- II. Standardization in EU Space Act proposal
- III. Standards mapping



CONTEXT

- EU Space Act proposal provides essential requirements to ensure **safety, resilience** and **sustainability**
- In matter of authorization (cf. previous presentations), each of these aspects perspective is covered by specific technical rules that **launch vehicles, spacecrafts** and **space infrastructure** must comply with
- Also, **space-based data** and **space services** are covered by specific essentials requirements
- Some of these technical rules (or essentials requirements) mentioned could be based on **standards, directly or indirectly**

- I. Introduction
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STANDARDIZATION WITHIN EU SPACT

(131a) This Regulation should rely on the current European standardisation framework, based on the New Approach principles, set out in Council Resolution of 7 May 1985 on approach to technical harmonization and standards and on Regulation (EU) No 1025/2012 of the European Parliament and of the Council.

→ Alignment with global EU standardization framework (cf. previous presentation)

Title V

Article 108 (Article 108) - Relations with the European Space Agency

(2) The agreement referred to in paragraph 1 shall set forth the conditions for the implementation by ESA of the requirements laid down in Title IV, and the practical and operational arrangements for ensuring the control of the application of such requirements, and in particular: [...]

(c) any support which may be provided by ESA regarding the technical specifications needed for standardisation, under the supervision of the Commission, while taking into account the existing international technical standards for space activities.

STANDARDIZATION WITHIN EU SPACE ACT

- Standardization is included in three ways within the EU Space Act proposal
 - Standardization request
 - Indirectly quoted by article
 - Methods based on European or international standards



STANDARDIZATION REQUEST

- Principle of harmonised standards via standardization request is covered by :

Title IV, Chapter VI

Article 104 (Article 112a) - Standards

(1) The Commission shall, in accordance with [Article 10\(1\) of Regulation \(EU\) No 1025/2012](#), **request one or more European standardisation organisations to draft standards [...]**

- Currently, only 3 topics should be covered by this scenario
- **CEN, CENELEC and ETSI** could be requested to draft standards supporting the legislation (as previously explained)
- Links between legislation and standards are direct : stakeholders know which standard could be follow
- Interested European stakeholders could contribute to these drafting

STANDARDIZATION REQUEST – COMMON SPECIFICATIONS



The regulation allows for the possibility that the European Commission may establish common specifications instead of harmonised standards

Title IV, Chapter VI

Article 104 (Article 112a) - Standards

(2) Where the conditions referred to in paragraph 3 are fulfilled, the Commission shall adopt implementing acts establishing common specifications covering the technical requirements which provide the means to comply with the essential requirements referred to in paragraph 1, first subparagraph.

→ Development of common specifications is endorsed by EC and doesn't follow the standardization process

STANDARDIZATION REQUEST - TECHNICAL COMMITTEES ABLE TO DEVELOPED HARMONISED STANDARDS



CEN/CLC/JTC 5 – Space

Scope : This TC covers all standardization activities in CEN and CENELEC related to space, including dual use aspects, systems of systems, as well as upstream and downstream applications, inasmuch as these topics are not covered by any other existing technical body in CEN or CENELEC or by the European Cooperation for Space Standardization (ECSS) or ETSI, therefore it is important and necessary that it coordinates its work with relevant technical bodies in ETSI. It develops European Standards that are needed to support the implementation of EU-level space projects.

→ MoU with ECSS – possible adoption of ECSS standards as EN



ETSI TC SES – Space

Scope : This TC is responsible for standardization relating to all types of satellite communication systems, services and applications including fixed, mobile and broadcasting; satellite navigation systems and services; all types of earth stations and earth station equipment, especially the radio frequency interfaces and network and/or user interfaces; and protocols implemented in earth stations and satellite systems.

Indirectly quoted

INDIRECTLY QUOTED

- Example

Title IV, Chapter II - Resilience of space infrastructure

Article 76 (/) - Risk management through the lifecycle of space missions

(5) Union space operators shall establish, implement and maintain an information security management system in accordance with relevant standards.

- Only few articles contain such statement

→ It is the role of organizations to find the relevant standards

METHODS BASED ON STANDARDS

- Example

Title IV, Chapter IV - In-Space operations and services

Article 101 (Article 101) - In-Space Operations and Services

(5) The Commission shall, by means of implementing acts, taking into account European or international standards or methods in place or under development, lay down:

(a) the design principles for the dedicated SSI referred to in paragraph 2;

- EC should have to developed methods by considering European and international standards
- If implementing acts are published, the methods would become **mandatory**.

→ Knowing related standards can offer anticipation for the ecosystem activities

SOURCE OF INTERNATIONAL STANDARDS

**ISO/TC 20/SC 14 - Space systems and operations**

Scope : Standardization of crewed and uncrewed space systems that include management of space programmes, design, production, verification, launch, operations, maintenance, and disposal of space systems, end user applications and services, and for the environment in which the space programmes operate.

ISO/TC 20/SC 13 - Space data and information transfer systems

- I. Introduction
- II. Standardization in EU Space Act proposal
- III. Standards mapping**



Disclaimer : the standards mapping, under any circumstances, doesn't constitute a regulatory compliance matrix.

It only shows the current standards relevant for each topic covered by the current version of the EU Space Act.



TECHNICAL TOPICS (1/6) SUPPORTED BY STANDARDS

	First proposal				Second proposal				Standards identified
	Article Nr.	SR	In acc. to standard	Method based on standard	Article Nr.	SR	In acc. to standard	Method based on standard	
Space-based data and service									
<ul style="list-style-type: none"> e-certificate (origin, integrity, path) 	25	X			25	X			/
Technical rules related to authorization process									
Launch vehicles									
<ul style="list-style-type: none"> Launch safety plan 	58				58				/
<ul style="list-style-type: none"> Safety and coordination measures during launch and re-entry (LCOLA, casualty risk) 	59				59		X		ISO 21740:2025 - Space systems — Launch window estimation and collision avoidance
<ul style="list-style-type: none"> Flight safety system (real time monitoring, telemetry) 	60				60				ISO 14620-3:2021 - Space systems — Safety requirements - Part 3: Flight safety systems
<ul style="list-style-type: none"> Space debris mitigation (space debris mitigation plan, end-of-life disposal) 	61				61				ISO 20893 - Space systems — Detailed space debris mitigation requirements for launch vehicle orbital stages ISO/TR 20590 - Space systems — Space debris mitigation design and operation manual for launch vehicle orbital stages

TECHNICAL TOPICS (2/6) SUPPORTED BY STANDARDS

	First proposal				Second proposal				Standards identified
	Article Nr.	SR	In acc. to standard	Method based on standard	Article Nr.	SR	In acc. to standard	Method based on standard	
Technical rules related to authorization process									
Spacecraft									
• Trackability/determination of orbital position	63				61a/63				ISO 26900:2024 Space data and information transfer systems — Orbit data messages EN 16603-60-30:2015 Space engineering - Satellite AOCS requirements
• Collision avoidance	64		x		64			X	ISO/DIS 23705 Identifying, evaluating, and avoiding collisions between orbiting objects ISO/TR 16158:2021 Avoiding collisions among orbiting objects
• Re-entry services	65				65				ISO/FDIS 27875 Space systems — Re-entry risk management for uncrewed spacecraft and launch vehicle orbital stages
• Orbital traffic rules in case of high interest event	/				65a	X			ISO/DIS 9490 Space Traffic Coordination
• Manoeuvrability	66				63a				
• Orbital traffic rules	68				/				ISO/DIS 9490 Space Traffic Coordination
• Positioning in orbit (prior to launch) - congestion	69				/				
• Space debris mitigation	70				70			X	ISO 23312 Space systems — Detailed space debris mitigation requirements for spacecraft ISO/TR 18146 Space debris mitigation design and operation manual for spacecraft

TECHNICAL TOPICS (3/6) SUPPORTED BY STANDARDS

	First proposal				Second proposal				Standards identified
	Article Nr.	SR	In acc. to standard	Method based on standard	Article Nr.	SR	In acc. to standard	Method based on standard	
Technical rules related to authorization process									
Spacecraft									
• Light and radio pollution	72	X			72	X			/
• Constellations (collision avoidance, orbit congestion)	73				73				ISO/DTR 25775 Space systems — Justification of requirements for a spacecraft large constellation

TECHNICAL TOPICS (4/6) SUPPORTED BY STANDARDS

	First proposal				Second proposal				Standards identified
	Article Nr.	SR	In acc. to standard	Method based on standard	Article Nr.	SR	In acc. to standard	Method based on standard	
Technical rules related to authorization process									
Resilience of Space infrastructure									
• Cybersecurity	/				75a		x		ISO/IEC JTC 1/SC 27 - Cybersecurity - ISO 27000 series
• Risk management	76/78				/				
• Identification and management of information and assets of space infrastructure	80				/				
• Management and control of access rights	81				/				
• Physical resilience	82				/				
• Detection and monitoring of incidents	83				/				
• Prevention and protection	84				/				
• Cryptography and encryption	85				/				
• Backup management and redundancies	86				/				
• Business continuity policy and response and recovery plans	87				/				

TECHNICAL TOPICS (5/6) SUPPORTED BY STANDARDS

	First proposal				Second proposal				Standards identified
	Article Nr.	SR	In acc. to standard	Method based on standard	Article Nr.	SR	In acc. to standard	Method based on standard	
Technical rules related to authorization process									
Resilience of Space infrastructure									
• Testing	88				/				ISO/IEC JTC 1/SC 27 - Cybersecurity - ISO 27000 series CEN-CENELEC/JTC 13 - Cybersecurity and Data Protection
• Learning and training	89				/				
• Crisis communication and disclosure policy	90				/				
• Handling of incidents	91				/				
• Supply chain risk management	92				/				

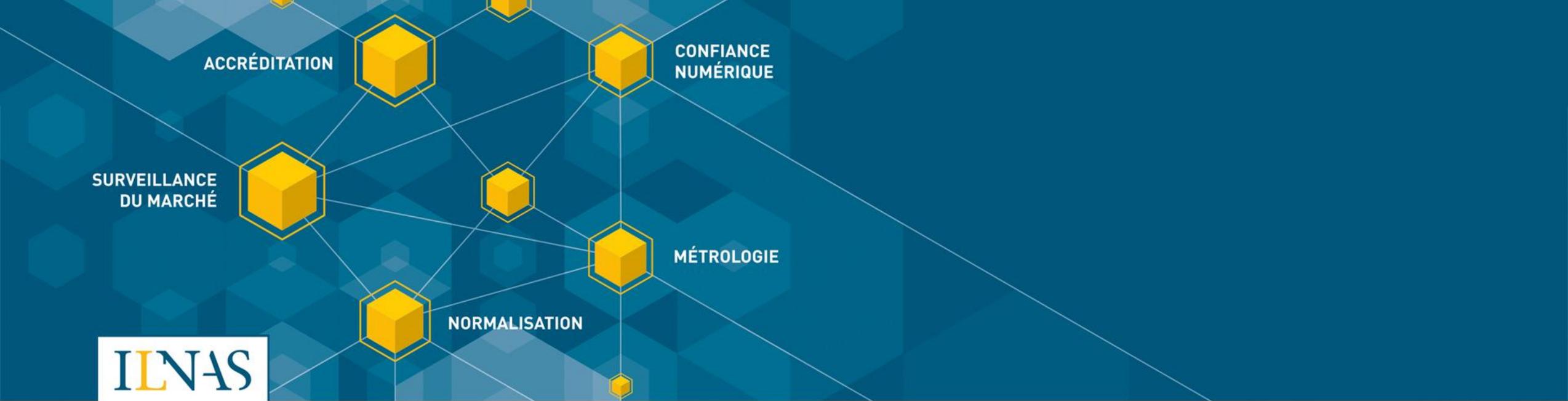
TECHNICAL TOPICS (6/6) SUPPORTED BY STANDARDS

	First proposal				Second proposal				Standards identified
	Article Nr.	SR	In acc. to standard	Method based on standard	Article Nr.	SR	In acc. to standard	Method based on standard	
Technical rules related to authorization process									
Environmental sustainability of space activities									
<ul style="list-style-type: none"> • Environmental footprint calculation 	96/97			x	96/97			X	ISO/TC 207 - several ISO 14000 series
In-Space Operations and Services (ISOS)									
<ul style="list-style-type: none"> • ISOS/SSI 	101				101			X	?

Conclusion



- In the context of the EU Space Act, the links between standards and regulation are strong
- Standards will support, directly or indirectly, the technical aspects of the different essentials requirements
- Currently, the **development of standards via standardization request** is foreseen for **three topics**:
 - Light and radio pollution for spacecraft
 - Orbital traffic rules
 - E-certification for data and space services
- Most of the technical aspects are covered by standards
- **Participation in standardization will allow stakeholders not only to define their technical rules, but also to anticipate the future requirements they will have to follow.**



Breakfast – EU Space Act: the foreseen role of standardization

National efforts related to space standardization

19 March 2026

Dr. Lucas CICERO – Aerospace and Technical Standardization Project Officer, ILNAS/OLN



- I. Context
- II. Standards Analysis 2026 – Aerospace sector
- III. Participation of Luxembourg space ecosystem to standardization



Policy on Aerospace
Technical Standardization
(2026-2030)

**1**

Identifying and following technical standardization activities related to the aerospace sector

- Drawing up a yearly national standards analysis for the aerospace sector
- Following relevant technical committees
- Following the standardization developments related to European policies and strategies

2

Promoting technical standardization related to aerospace and strengthening national market involvement

- Promoting the use of standards and the participation of the national market in technical standardization activities
- Supporting the national participation to standardization activities
- Create transversal links with other sectors and domains identified by the national standardization strategy

3

Supporting and strengthening the Education about Standardization and the related research activities

Policy on Aerospace
Technical Standardization
(2026-2030)



1

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Policy on Aerospace
Technical Standardization
(2026-2030)



1

Identifying and following technical standardization activities related to the aerospace sector

- Drawing up a yearly national standards analysis for the aerospace sector

Standards analysis for the aerospace sector = Sector-based “Snapshot”

- **Standards watch of the related sector**
 - Inventory of standards – both published and under development – at the European and international levels
 - Identification and description of technical standardization committees
 - Mention of the related national representation
- **Relevant national companies, agencies and fora/consortia related to the aerospace sector**

→ Details provided in second section of this presentation

Policy on Aerospace Technical Standardization (2026-2030)



2

Promoting technical standardization related to aerospace and strengthening national market involvement

- Promoting the use of standards and the participation of the national market in technical standardization activities
- Supporting the national participation to standardization activities

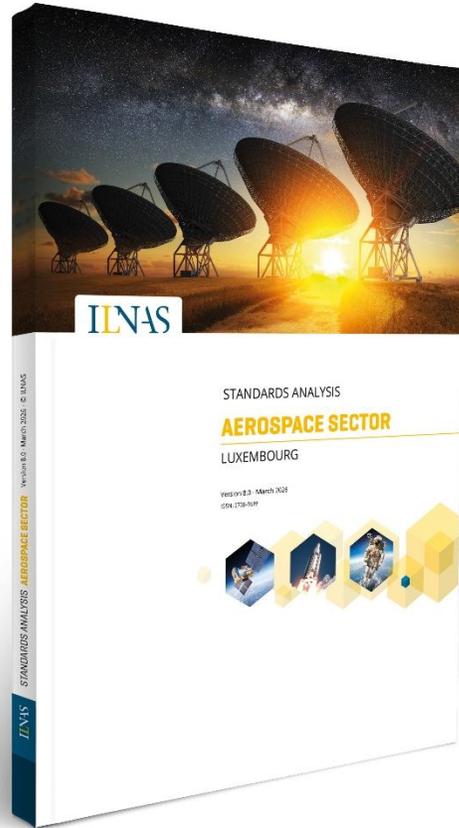
Creation of a National Standardization Commission NSC 06 “Space”

- Participation to standardization is offered to national member via National Mirror committee
- National Standardization Commission will support a more systemic approach

→ Details provided in third section of this presentation

- I. Context
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- III. Participation of Luxembourg space ecosystem to standardization





MAIN INFORMATION

The importance of technical standardization in the Aerospace sector

PURPOSE

To help you identify :

- Relevant technical committees related to the Aerospace sector
- Relevant standards and projects addressing the Aerospace sector

WHAT AIMS?

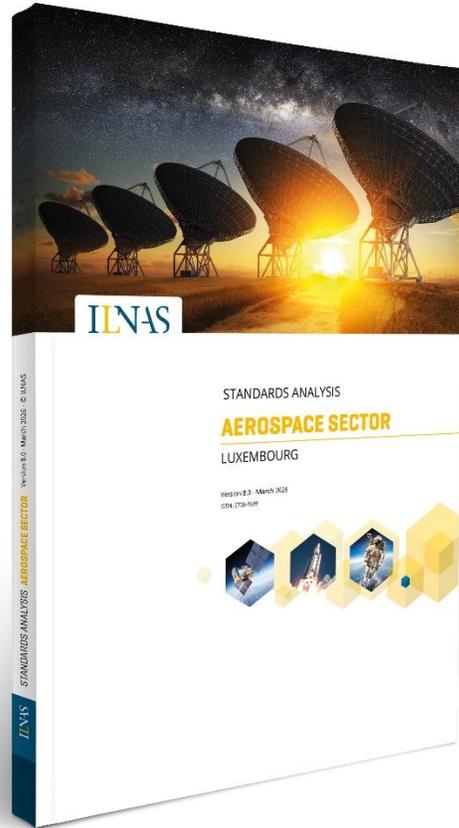
- Sources of technical standards that might impact/help you
- Understand the importance of technical standardization in Aerospace sector
- Identify standards development connected to your business in which participating in their development could be of interest

DOWNLOAD THE NEW STANDARDS
ANALYSIS OF THE
AEROSPACE SECTOR 2026 V.8.0



<https://gd.lu/5g7r7z>





PART 1 - INTRODUCTION TO AEROSPACE SECTOR

- Aerospace overview
- Aerospace market economy

PART 2 - STANDARDIZATION IN THE FIELD OF AEROSPACE

- Standards organizations and standards development process
- The importance of technical standardization in the Aerospace sector

PART 3 - OPPORTUNITY FOR THE NATIONAL MARKET

- How can technical standardization benefit the national market?
- How to become a national delegate and the advantage to be one?

PART 4 - AEROSPACE SECTOR STANDARDS WATCH

- List of relevant Technical Committees

DOWNLOAD THE NEW STANDARDS
ANALYSIS OF THE
AEROSPACE SECTOR 2026 V.8.0



<https://gd.lu/5g7r7z>



PART 4 - AEROSPACE SECTOR STANDARDS WATCH

List of relevant Technical committees - Classification

Space data and information
transfer systems
2 technical committees

Management and quality
assurance
5 technical committees

Spacecraft design, manufacturing,
assembly and testing (MAIT)
12 technical committees

General space standardization
2 technical committees

Earth observation and
observational astronomy
4 technical committees

Telecommunications
18 technical committees

PART 4 - AEROSPACE SECTOR STANDARDS WATCH

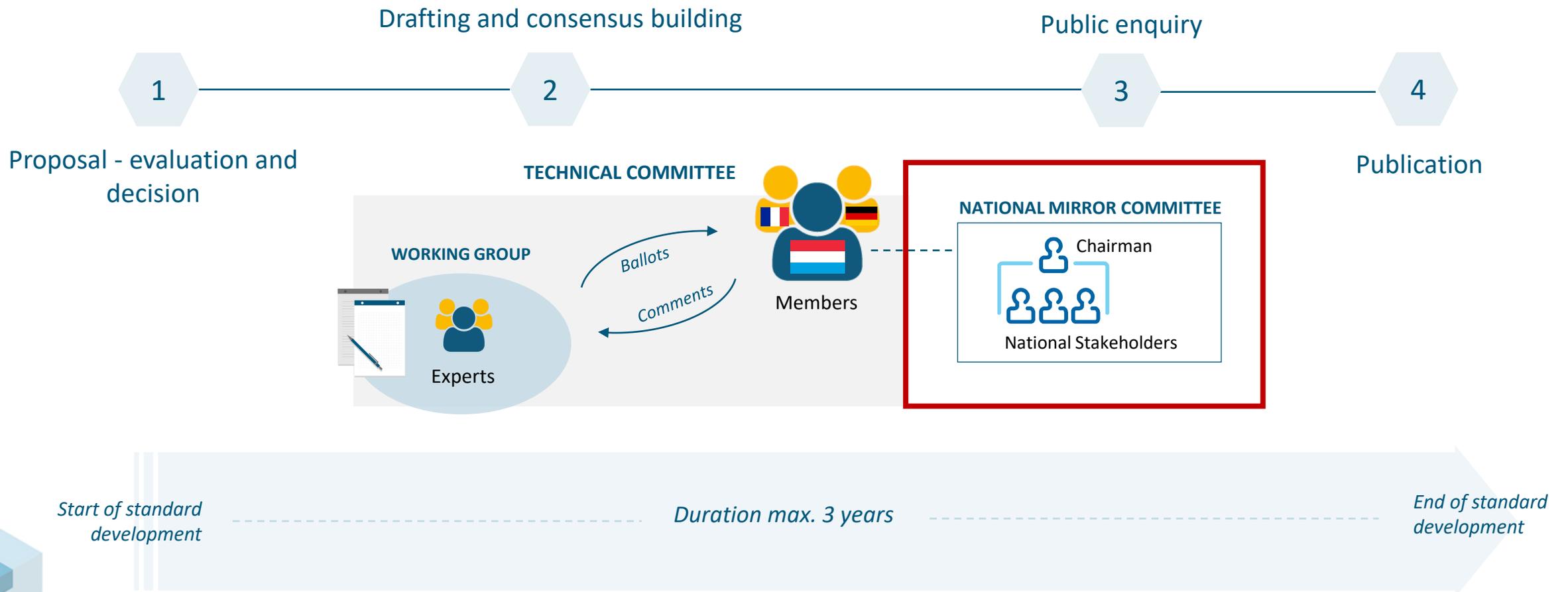
List of relevant Technical committees - Example of technical committee

CEN/CLC/JTC 5 Space			
GENERAL INFORMATION			
Creation date	1987	Secretariat	DIN (Germany)
Chairperson	Mr. Legrand Thierry	Secretary	N/A
Scope	This technical committee covers all standardization activities in CEN and CENELEC related to space, including dual use aspects, systems of systems, as well as upstream and downstream applications, inasmuch as these topics are not covered by any other existing technical body in CEN or CENELEC or by the European Cooperation for Space Standardization (ECSS) or ETSI, therefore it is important and necessary that it coordinates its work with relevant technical bodies in ETSI. It develops European Standards that are needed to support the implementation of EU-level space projects.		
Structure	WG 1 Navigation and positioning receivers for road applications WG 2 Space Situational Awareness Monitoring WG 6 Upstream standards WG 7 Future activities in space standardization WG 8 SBAS receivers performances for Maritime applications WG 9 Galileo Timing Receivers		
Webpage	https://standards.cencenelec.eu/dyn/www/f?p=205:7:0::::FSP_ORG_ID:887985&cs=17D471F6F920904967AFC18C2BDA2F89F		
STANDARDIZATION WORK			
Published standards	207	Projects	14
EUROPEAN MEMBERS			
P-Members	35 (including Luxembourg)		17

- I. Context
- II. Standards Analysis 2026 – Aerospace sector
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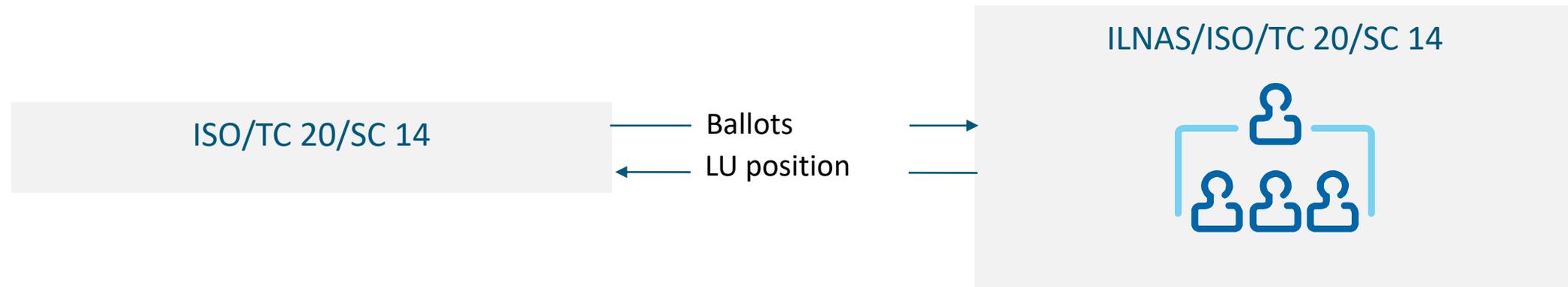


STANDARDS DEVELOPMENT PROCESS



PARTICIPATION POSSIBILITIES FOR NATIONAL STAKEHOLDERS

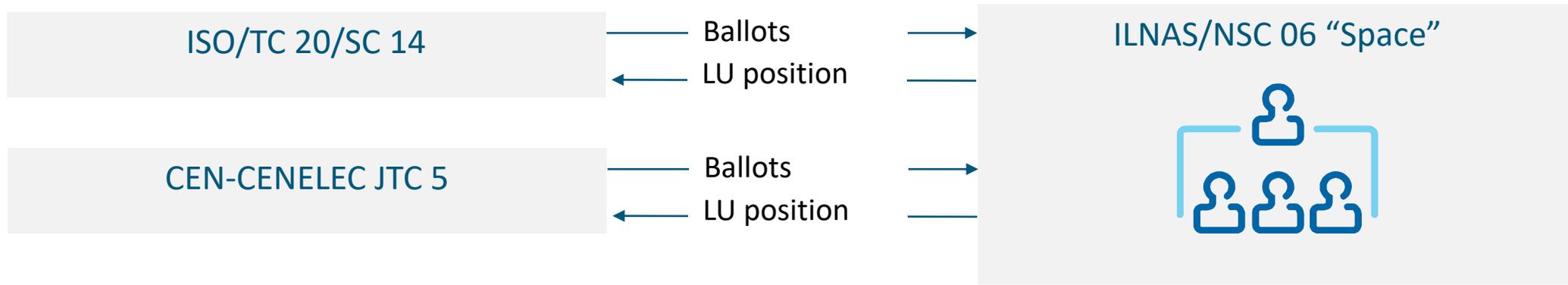
National Mirror Committee



- One-to-one mapping between with European or international technical committee
- Low flexibility
- Non holistic approach

PARTICIPATION POSSIBILITIES FOR NATIONAL STAKEHOLDERS

National Standardization Commission



- Mapping can be made according to national needs
- High flexibility
- Need to have only **one chair** by topic
- Holistic approach (crossed ballot can be addressed simultaneously during national discussions)

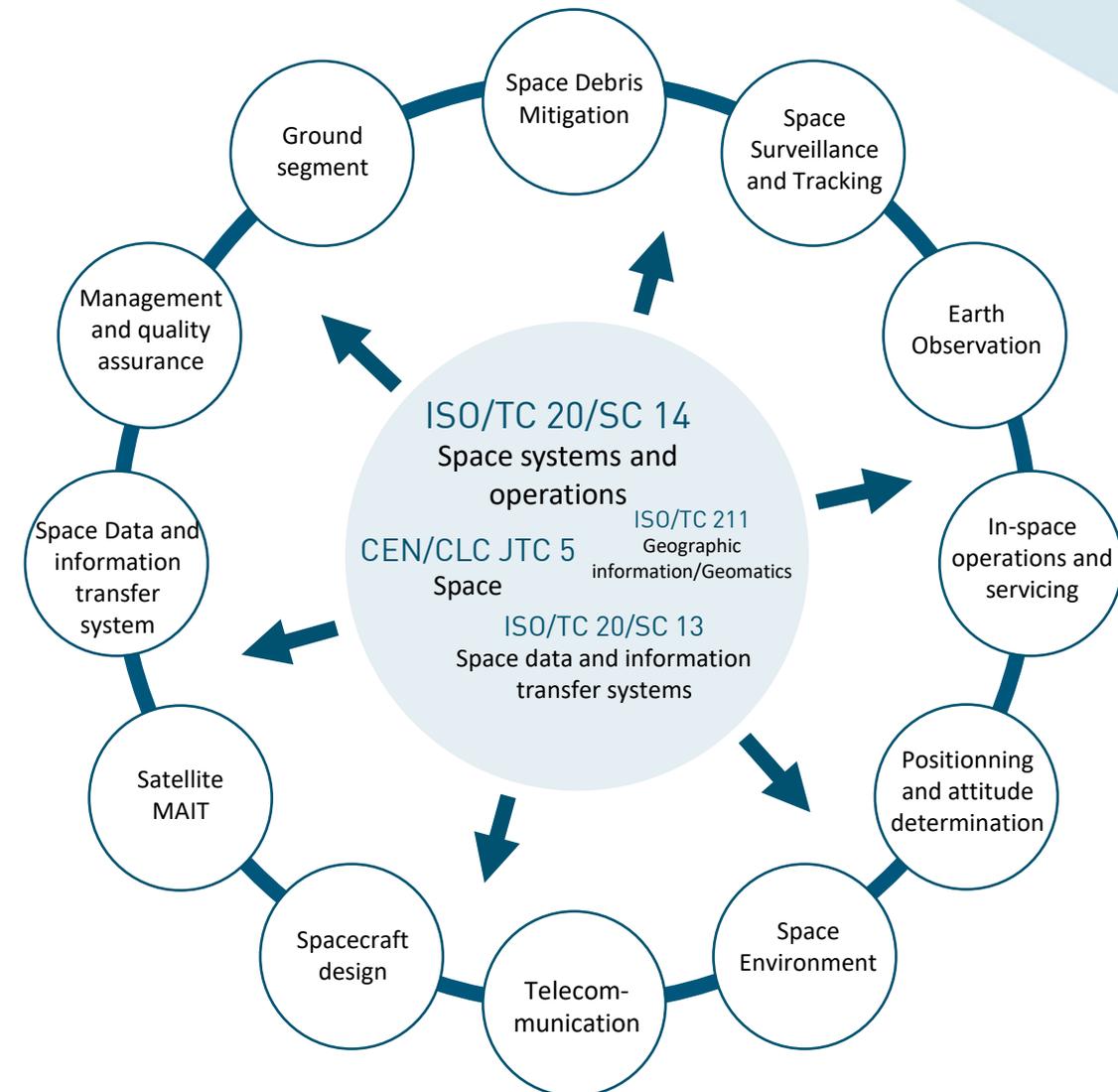
→ Selected solution

INITIAL PROPOSITION

Set-up of several National Standardization Commission
« Space »

- European and international technical committees covered a broad areas of topics
- Delegates' expertise can not cover all the different domains addressed by the technical committees
- Action started beginning 2024, with LSA support
 - Several meetings with national stakeholders

→ **Need to have a complex coordination and several chairs**



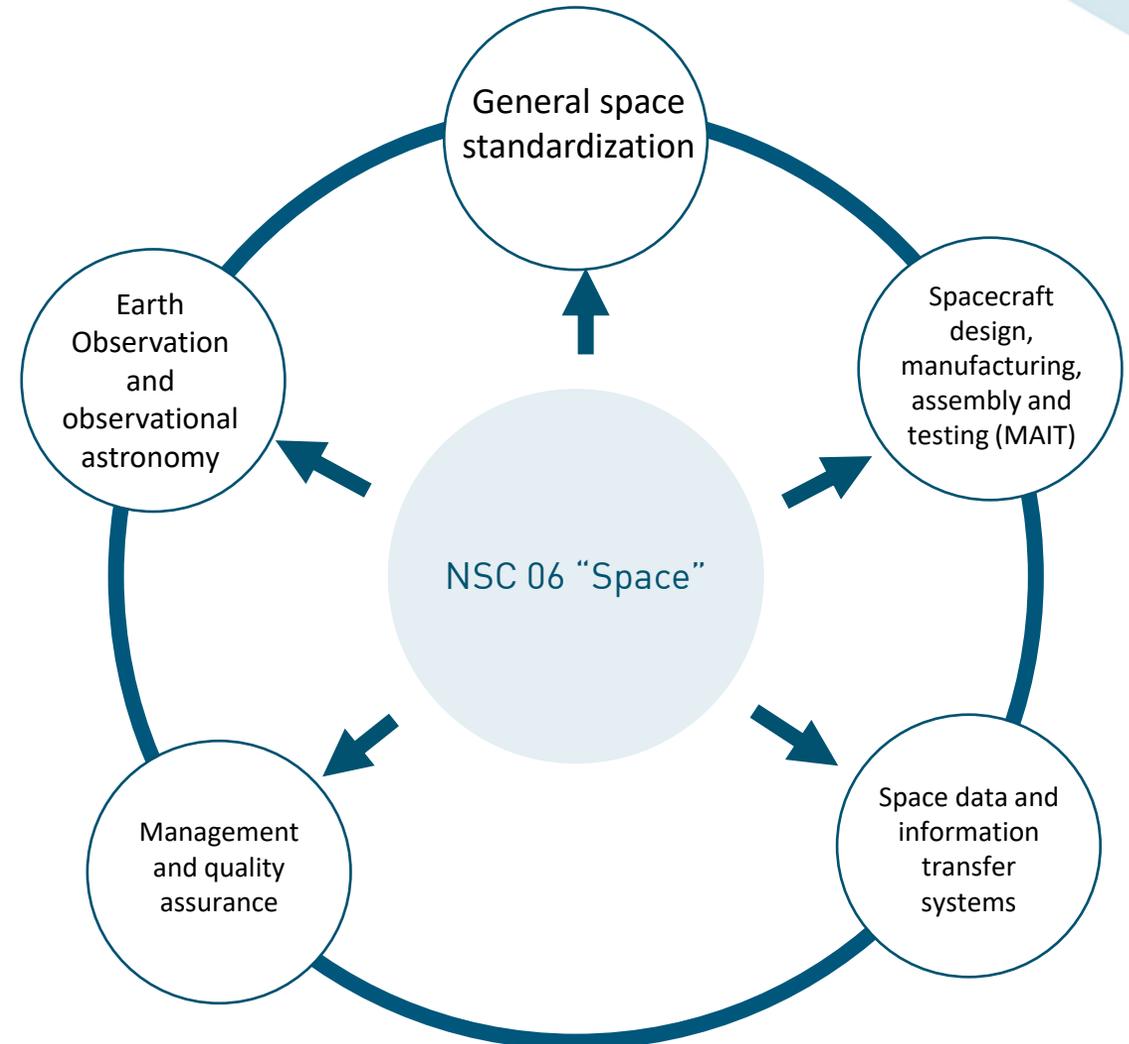
NEW PROPOSITION

Set-up of a single National Standardization Commission « Space » with several sub-groups

- Aligns with the technical committees from main recognized standardization organization
- Open to all national stakeholders
- Free-of-charge

SAVE THE DATE

→ Kick-off meeting on 7 May 2026

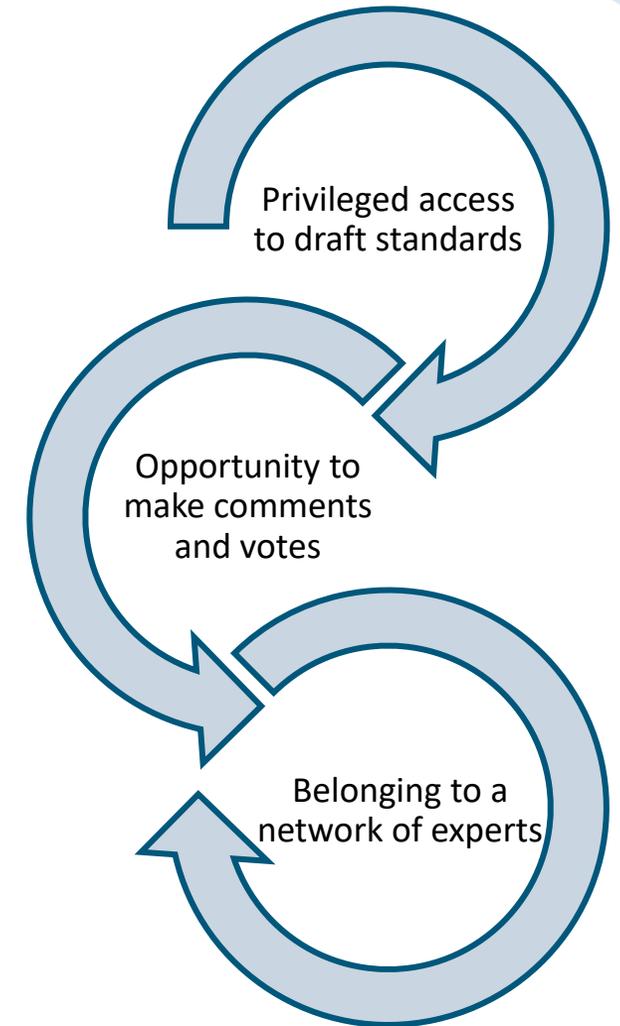


NEW PROPOSITION

ILNAS/NSC 06/General standardization	ISO/TC 20/SC 14 CEN/CLC JTC 5
ILNAS/NSC 06/Earth Observation and observational astronomy	ISO/TC 211 CEN/TC 287 ISO/TC 172/SC 6
ILNAS/NSC 06/Spacecraft design, manufacturing, assembly and testing (MAIT)	ISO/TC 20/SC 4 ISO/TC 20/SC 10 ISO/TC 20/SC 18 ISO/TC 44/SC 14 ASD-STAN/D02 ASD-STAN/D03 ASD-STAN/D04
ILNAS/NSC 06/Space data and information transfer systems	ISO/TC 20/SC 13 ASD-STAN/D07
ILNAS/NSC 06/Management and quality assurance	IEC/TC 107 ASD-STAN/D 01 ASD-STAN/D 06

Why to get involved in National Standardization Commission development?

- Access drafts standards and influence their content based on your know-how
- **Collaborate to defend common interests – EU Space Act**
- Learn about your competitors and their positions in meetings
- Promote your organization and your skills at national, European and international levels
- Propose new standards projects
- Increase your knowledge regarding the state of the art in standardization of your core business
- **Anticipate the evolution of your activity sector's good practices – EU Space Act**
- Integrate strategic network of national, European or international experts



Becoming a delegate

What are the tasks?

- Technical support for standard development activities
- Provide your expert's view in WG decision
- Be part of the different development meeting (national, European or international)
- Provide your position to defend Luxembourg interests



Who can participate?

- Every socio-economic actor in Luxembourg with a certain expertise

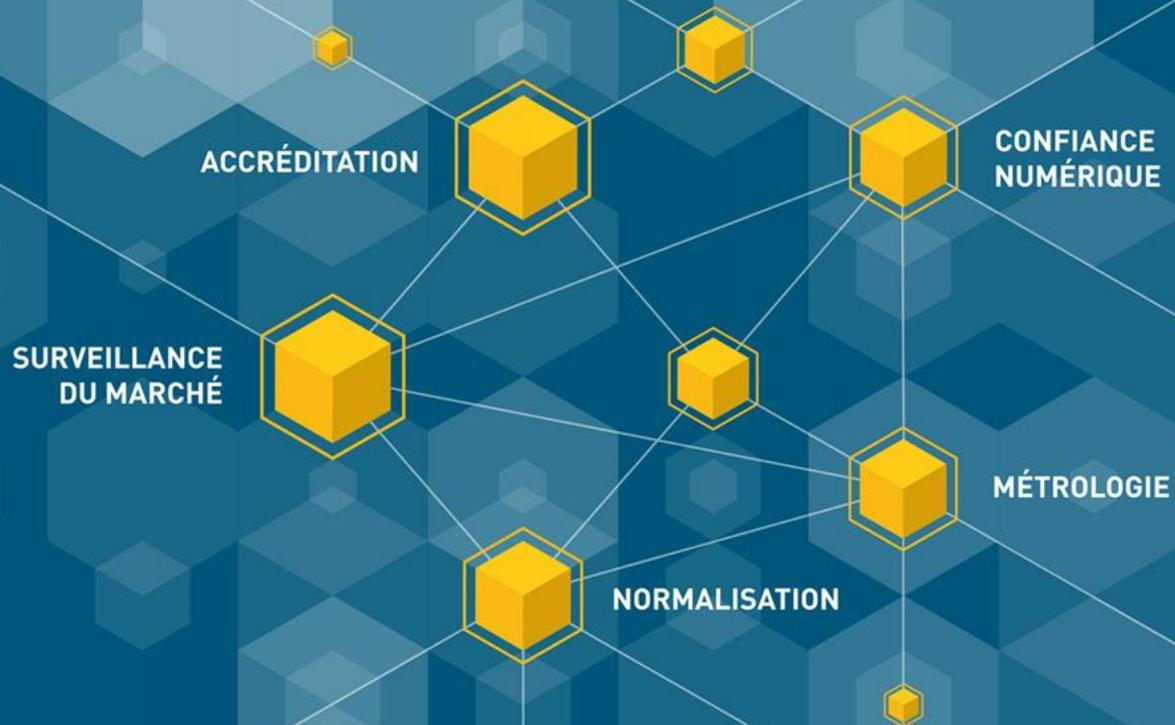


Costs: just time

- The participation in Luxembourg is free of charge

How to register?

- You can apply to become a national delegate in standardization by completing the registration form "ILNAS/OLN/F001a" (Initial registration)



Thank you for your attention!

ILNAS

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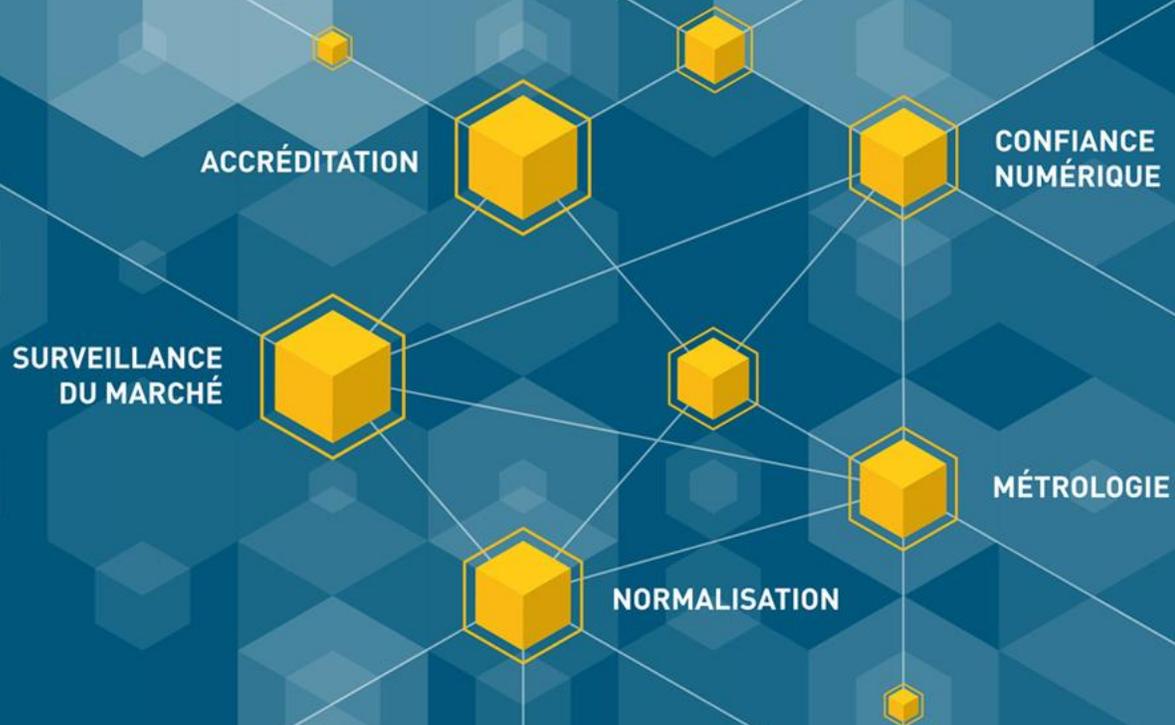
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Q&A session





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